PISA 2025 Results (Volume I)

Future-Ready Students

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FUTURE-READY STUDENTS

BETTER POLICIES FOR BETTER LIVES

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Preface

In 2025, more than 760 000 students, representing around 33 million 15-year-olds across 91 countries and economies, participated in the PISA assessment. This cycle focused on science, alongside reading, mathematics and an innovative assessment of learning in the digital world. An optional assessment of English as a foreign language was also offered.

The results reveal an uneven picture. Following the unprecedented drop in performance recorded in PISA 2022, learning outcomes have largely stagnated or continued to decline in many countries.

Science, the main focus of PISA 2025, has been comparatively resilient over the past decade. Average science scores fell modestly across OECD countries between 2015 and 2025, while remaining broadly stable among non-OECD participants over the same period.[1]

The picture is more challenging in mathematics. Across OECD countries, average scores fell by 22 points between 2015 and 2025 - equivalent to just over one year of learning. Among non-OECD participants, mathematics performance also declined.[2]

Reading recorded the steepest decline, with scores falling by 28 points across OECD countries and by 16 points among non-OECD participants between 2015 and 2025.[3] This trend is particularly concerning because reading skills underpin learning across the curriculum and are essential for finding, evaluating, interpreting and reflecting on information in an increasingly digital world.

Across the OECD, 20% of 15-year-old students are now estimated to be low performers across all three subjects – up from 16% in 2022. These students lack the foundational skills needed to succeed in further education, employment and everyday life.

Socio-economic disparities narrowed across OECD countries between 2022 and 2025, driven by declining performance among advantaged students rather than gains among disadvantaged students.

These developments are part of a longer-term trend. The weakening of performance predates the COVID-19 pandemic in many countries, pointing to deeper and more persistent challenges within education systems. In reading, increased digitalisation, longer screen time and falling rates of reading for enjoyment have coincided with weaker literacy outcomes. Countries with the largest declines in reading also tended to record the largest drops in mathematics and science.

Yet, these trends are not inevitable. Some countries are bucking the trend. Within the OECD, science scores rose in Costa Rica, the Slovak Republic, Türkiye and the United Kingdom. Among non-OECD members, scores also went up in Cambodia, El Salvador, Georgia, Jordan, Mongolia, Montenegro, the Philippines, Saudi Arabia, Thailand, the United Arab Emirates, Uruguay and Uzbekistan.

Most participating Chinese jurisdictions, Estonia, Japan, Korea, Singapore, Chinese Taipei and the United Kingdom were among the top-performing education systems across science, mathematics and reading, ranking within the top ten in all three domains.

Several countries also demonstrated that higher performance and more inclusive outcomes can go hand in hand. Türkiye, the United Arab Emirates, Montenegro, Qatar and the Slovak Republic reduced their share of low-performing students, while increasing their share of top-performers.

Digital and AI tools are increasingly embedded in students’ learning, but their relationship with performance depends on how they are used. Across OECD countries, moderate use of digital devices for learning is associated with stronger science performance, while excessive use and digital distraction are associated with weaker outcomes. More than one in four students report that their classmates are distracted by digital devices in most or every science lesson.

Policymakers have several levers to make education systems more effective and efficient. The starting point is focus: set high, consistent expectations for every student in reading, mathematics and science. Education systems need to favour depth over breadth – better to teach a smaller set of core topics well enough for genuine mastery than to rush through a long list only superficially. That focus only pays off, though, if the rest of the system supports it: curriculum, teaching and assessment need to reinforce each other rather than pull in different directions, and classrooms need to be kept free of avoidable digital distractions, for instance by limiting non-instructional phone and device use during lessons.

Teachers are central to making education systems perform well. They need to be equipped with strong teaching skills – not just subject knowledge, but the practical skills to explain clearly, manage a classroom and keep students engaged and motivated. Resources also need to be matched to need, especially for disadvantaged students and schools. Finally, as artificial intelligence becomes part of the classroom, it should be used in a targeted way for feedback and personalised practice. It should add to students' effortful learning rather than replace it, since real understanding comes from doing the thinking, not from having a tool do it instead.

Policymakers can now draw on this unique evidence to learn from peers, prioritise their efforts, and build effective education systems that equip students with the knowledge and skills they need to thrive in a rapidly changing world.

Mathias Cormann,

OECD Secretary-General

Notes

[1] OECD average science scores fell from 489 to 482 points between 2015 and 2025, while remaining broadly stable among non-OECD participants at 436 and 437 points, respectively.

[2] OECD average mathematics scores fell from 485 points in 2015 to 463 points in 2025. Among non-OECD participants, average scores declined from 434 to 426 points over the same period.

[3] Average reading scores fell from 489 to 461 points across OECD countries and from 428 to 412 points among non-OECD participants between 2015 and 2025.

Foreword

It was the idea to apply the rigors of scientific research to education policy that nudged the OECD to create PISA in the late 1990s. Now every three years, hundreds of thousands of 15-year-olds from over 90 countries sit down to answer questions in the global PISA test. They do not revise for it, nor do the results affect their grades. Yet ministers scrutinise the outcomes, newspapers splash them across their front pages, and education systems are praised or questioned accordingly.

This is because the PISA measures of student learning outcomes are the most reliable measure of the quality and effectiveness of school systems, and thus one of the most powerful predictors for the long-run success of economies and societies. Researchers at Stanford University estimate that if all 15-year-old Americans achieved at least a basic level of performance in PISA (baseline Level 2), this could add over US$ 40 trillion to the US economy over their working lives.

Yet, on average across OECD countries, 20% of 15-year-old students do not reach this threshold in any of the PISA subjects – up from 16% in 2022. In science, this means they struggle to interpret simple data or identify evidence in a graph. In reading, they will find it hard to understand simple texts, while in maths they could have trouble deciphering the relationship between units and price - the kind of tasks embedded in everyday life, from grocery shopping to reading a utility bill. This isn't about calculus. It's about basic competence. And these are not students in war zones or in nations without infrastructure. They live in the high- and middle-income countries of the OECD. They have had nine or ten years of formal education. By global standards, they are among the lucky ones.

But PISA was never meant simply to point out what is going wrong. Its ambition has always been to raise expectations of what is possible. The idea was straightforward: assess what young people know and can do, using an internationally agreed yardstick; connect those results with data from students, teachers, schools and parents to understand why performance differs; and then turn comparison into a force for improvement.

When one country succeeds, it becomes a reference point for others. Policymakers start asking "What are they doing differently, and what can we learn from it?" And when results disappoint, they are rarely just numbers in a report. They provoke national debate, challenge long-held assumptions and, at their best, become the catalyst for serious reform. In that sense, PISA is not a league table, it provides a compass.

PISA also offers powerful reminders that change is possible. Germany transformed the wake-up call of the 2001 PISA shock into a far-reaching programme of reform. Brazil showed that greater equity and higher quality can advance hand in hand, dramatically expanding educational opportunity while improving PISA outcomes. And Türkiye demonstrated how quickly progress can happen, lifting science performance by almost 70 PISA points in a decade – the equivalent of adding more than three years of learning.

PISA tells us that the world is no longer divided into rich countries with great schools and poor countries with weak ones. Some of the most remarkable educational progress is now happening in places with far fewer resources. Cambodia, for example, is beginning the kind of educational transformation that once propelled economies such as Korea and, more recently, China and Vietnam onto a path of sustained economic growth and rising prosperity. Equally important, good policies and wise spending choices are far stronger predictors for performance on PISA than just how much countries spend per student: At USD 288,521 per student, Luxembourg is by far the biggest spender on education, but it posted lower average science scores than Ireland, France and Italy – all of which invested less than half that amount per student.

Perhaps most importantly, PISA helps countries navigate the future together. This latest edition lays out the space for policy action on two fronts: first, the steady erosion of reading skills – the foundation upon which almost all learning is built – and second, the extraordinary opportunities and risks created by artificial intelligence.

Between 2018 and 2025, reading performance fell in three-quarters of education systems with comparable data, across the OECD by 25 score points – more than a year of learning. The biggest surprise is who fell furthest behind. It was not the most disadvantaged students, but those from wealthy families. This finding points to a much broader challenge than inequality alone.

Most troubling is the decline in the very skills that matter most in the AI age: evaluating information, making connections across multiple sources, and thinking critically about what we read. In turn, the share of "hasty readers" – students who rush through texts and give quick but incorrect answers – almost doubled between 2018 and 2025. In a world increasingly flooded with information, our students are less likely to think deeply and separate signal from noise.

People quickly turn to explanations such as the impact of the COVID pandemic, but a decline in reading was already visible well before the pandemic hit. We cannot say for sure, but declining levels of reading for enjoyment and the shift towards digital reading – skimming social media feeds and rapidly processing information – may be compromising the ability of students to engage with complex texts and data.

Perhaps not surprisingly then, while limited or moderate use of digital devices for learning at school is often associated with better outcomes, when they are used for leisure during school, the relationship reverses sharply, with substantially lower levels of student performance. This raises questions about whether devices such as smartphones – designed to maximise a user's attention – are compatible with sustained academic attention.

Is the arrival of GenAI changing the equation? At first glance, the PISA data aren't positive: Students who are using AI chatbots for specific tasks such as summarising texts get lower scores in science, on average, than those who don't.

The patterns are complex, and depend a lot on how GenAI is used, but the bottom line is simple: In the same way that we do not become fit by watching sports but by doing sports, learning does not occur through the consumption of content, but as a productive cognitive struggle of the mind with new material. Where technology enables or enhances that cognitive struggle, students will advance. Where technology short-circuits the productive struggle of learning, it will undercut students' development. If we get this right, AI becomes a scaffold, not a crutch. A tool for thinking, not a substitute for it. And education remains what it has always been at its best: a human endeavour, powered by judgment, relationships and trust.

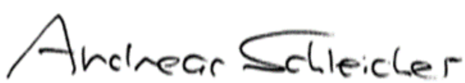
For policymakers looking to strengthen digital literacy, the lesson is clear: Digital readiness does not begin with devices, it begins with helping young people cultivate the ability to concentrate, interpret, synthesise and reason – capacities that are deeply tied to the habits of deep reading. This is not a call to turn back the digital clock, but to find balance. Technology can be a powerful amplifier of learning, but only if students are equipped with the cognitive and metacognitive tools to use it wisely. That means protecting time for reading in the school day. It means designing digital learning platforms that reward reflection, not just reaction.

In a world of shrinking attention spans and rising information overload, policymakers have a crucial role to play in shaping an educational culture that nurtures the depth of thought necessary to thrive. The future belongs not just to those who can access information – but to those who can interpret it, connect it and make meaning from it. Some countries are taking this insight seriously. In France, reforms to the national curriculum have reemphasised literature and reading comprehension as core competencies across disciplines. In Singapore, despite its high-tech classrooms, students still spend substantial time with print texts, and reading remains a centrepiece of early education. Sweden, long admired for its education system, promotes reading through libraries, national reading campaigns, and pedagogical practices that value depth over speed.

But perhaps the greatest challenge facing education is not how to use new technologies in the classroom. It is deciding what knowledge, skills and values students will need to flourish in a world of AI. These days, it is tempting to see AI as a force that steadily erodes human agency. If machines can mimic our abilities and take over our tasks, what will be left for us? But at their best, humans are far more than the sum of isolated, automatable tasks. We make sense of the world, spot connections and make moral choices.

The rise of AI should not shrink that space – it should expand it. If machines increasingly master the routine, then education must double down on the irreducibly human. On our ability to think about our own thinking. To zoom out and see the system behind the symptom. To build and navigate complex social relationships. To make ethical judgments when the data run out. To create what has never existed before. Those are not soft skills; they are survival skills in the digital age. They are what allow societies to deliberate, economies to innovate, and communities to hold together when the ground shifts beneath them. If education fails to defend and cultivate those capacities with clarity and courage, AI won't just automate our tasks – it could quietly erode some of the foundations of our civic life.

All of this brings us back full circle to PISA. If PISA is to remain a compass for the future, rather than just a mirror of the past, it must continue to evolve. It must keep redefining what it means to flourish – not in the world we grew up in, but in the world today's young people will inherit and shape.



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The Learning in the Digital World (LDW) Framework was developed by Natalie Foster, Emma Linsenmayer and Mario Piacentini of the OECD Secretariat, under the guidance of the Learning in the Digital World Expert Group (LDWEG). The LDWEG included Gautam Biswas (Vanderbilt University, United States), Engin Bumbacher (University of Teacher Education, Vaud, Switzerland), Frank Goldhammer (Leibniz Institute for Research and Information in Education (DIPF), Germany), Sanna Järvelä (University of Oulu, Finland), Samuel Greiff (formerly University of Luxembourg, now Technical University of Munich, Germany), Ido Roll (Technion – Israel Institute of

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The framework for the PISA 2025 questionnaires was developed by Daniel Salinas and Miyako Ikeda of the OECD PISA Secretariat, with guidance and input from various experts. The questionnaire expert group was chaired by Therese Hopfenbeck (Melbourne Graduate School of Education, Australia). This group included Jonas Bertling (formerly Education Testing Service, United States, and now ACER, Australia), David Kaplan (University of Wisconsin-Madison, United States), Nordin Abd Razak, (Universiti Sains, Malaysia) and Nina Jude (Ruprecht-Karls-Universität Heidelberg, Germany). For certain content included in the questionnaires, the Secretariat consulted external experts including Elise Huillery, Alexandre Touw, Larry Suter, Mark Bray, Nutsa Kobakhidze, Carol Dweck, David S. Yeager and Mary C. Murphy.

The development of the report was steered by the PISA Governing Board, chaired by Michele Bruniges (Australia), with Akiko Ono (Japan), Manuel Fernando Palacios da Cunha e Melo (Brazil) and Carmen Tovar Sánchez (Spain) as Vice Chairs. Countries and economies provided feedback on earlier drafts; their help in improving this volume is gratefully acknowledged.

Annex E of this volume lists the members of the various PISA bodies, including Governing Board members and National Project Managers in participating countries and economies, the PISA Consortium and the individual experts and consultants who contributed to PISA 2025.

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Reporting approach

This edition of PISA includes data from 91 countries and economies. While the vast majority of countries and economies met PISA's technical standards (OECD, 2025[1]) (also available online), a small number did not. Quality assurance data were collected by the PISA Consortium for each adjudicated entity throughout the PISA 2025 assessment. These data were reviewed by the PISA Adjudication Group – comprising the Technical Advisory Group and the Sampling Referee – which recommended appropriate treatments to preserve the overall quality of the data.

The following section outlines the reporting approach, which was developed based on these recommendations. Readers are alerted, where relevant throughout the volume, to any potential limitations identified by the Adjudication Group. For further details, please refer to the *PISA 2025 Technical Report* (OECD, forthcoming[2]). It is important to note that the limitations and implications were assessed by the PISA Adjudication Group in February 2026. There may be a need for subsequent adjustments as new evidence on the quality and comparability of the data emerges.

Reporting with annotations (asterisk)

The results of six countries and eight regions within countries, listed below, will be reported with annotations, signalled throughout the text with an asterisk. Caution is required when interpreting estimates for these entities because one or more PISA sampling standards listed below were not met.

- **Overall exclusion rate. Standard 6.8**: The PISA defined target population covers 95% or more of the PISA desired target population. That is, school-level exclusions and within-school exclusions combined do not exceed 5%.
- **Institution (school) response rate. Standard 6.13**: The final weighted school response rate is at least 85% of sampled eligible and non-excluded institutions. If a response rate is below 85% then an acceptable response rate can still be achieved through agreed-upon use of replacement institutions**.**
- **Student response rate. Standard 6.14**: The final weighted student response rate is at least 80% of all students sampled for PISA assessments from PISA defined target population across responding schools.

The 14 entities can be grouped into two groups:

(i) **Full reporting with asterisk:** Canada, the Netherlands, New Zealand and Norway, as well as seven subnational entities in Canada (Alberta, British Columbia, Manitoba, Newfoundland and Labrador, Nova Scotia, Ontario and Quebec) and one subnational entity in Spain (Murcia).

(ii) **Limited reporting with asterisk**: Albania and the United States.

(i) Full reporting with asterisk

Canada:

- **School response rate: 79% before replacement, and 82% after replacement. Student response rate: 77%.** Non-response issues were not uniform across Canada but concentrated in some provinces. Canada submitted a strong analysis of non-response bias. At the school level, its results suggest that achievement differences between participating schools and non-participating schools are generally small and were deemed statistically not significant after weight adjustments were applied. At the student level, non-response led to slightly higher overall results at the national level. In particular, a small upward bias was observed in Alberta, British Columbia, Manitoba, Newfoundland and Labrador, Nova Scotia, Ontario and Quebec. Taken together, these provinces account for over 90% of 15-year-old students in Canada, and a positive bias is therefore also present at the national level. Range-of-biases analysis conducted by the OECD, based on hypothetical best- and worst-case scenarios, showed that this upward bias affecting mean-score estimates is unlikely to exceed 15 points in science (±15.0% of a standard deviation), like in the case of the Netherlands and New Zealand.

The Netherlands:

- **Overall exclusion rate: 9.3%.** This remained close to the rate observed in 2022 (8.4%).
- **School response rate: 66% before replacement, and 88% after replacement. Student response rate: 78%**. Range-of-bias analyses based on hypothetical best- and worst-case scenarios suggest that, even after weight adjustments, student non-response could still affect mean scores by up to ±9.9% of a standard deviation (i.e about 11 score points in science). In contrast, at the school level, the potential bias is very limited (±2.8%). The Netherlands submitted a rigorous non-response bias analysis, but data about student performance were only available at the school level. At that level, the findings suggest that distortions introduced through school non-response were largely removed by using replacement schools and adjusted weights. At the student level, response rates differed by educational track and grade, and the use of these factors in the adjustments likely reduced the initial differences between respondents and the full sample of respondents and non-respondents. However, it cannot be ruled out that, within each grade and educational track, non-response is still related to student performance or attendance.

New Zealand:

- **Overall exclusion rate: 8.1%**. Overall exclusions increased over the rate observed in 2022 (5.8%); after removing students with limited language proficiency, exclusions amounted to 6.7%.
- **School response rate: 45% before replacement; and 52% after replacement. Student response rate: 76%**. New Zealand submitted a rigorous non-response bias analysis, using data from national academic records about students' achievement in national tests and attendance. At the school level, despite low participation rates, the evidence suggests there is little risk of significant bias. This is because school non-response was not systematically related to performance, and any initial differences were largely removed by using replacement schools and adjusted weights. At the student level, however, the analysis points to a likely upward bias, similar in size to what was already observed in 2022 (when student participation was even lower, at 72%). As a result, mean-score estimates may be over-estimated by about 10 to 15 score points. Even so, this bias is unlikely to affect comparisons between PISA 2022 and PISA 2025 in meaningful ways.

Norway:

- **Overall exclusion rate: 10.4%**. Overall exclusions increased over the rate observed in 2022 (7.3%). This high level of student exclusions may bias performance results upwards.

Spain's regions:

- In Spain, **within-school exclusions** increased between 2022 and 2025; in particular, in two regions: **Catalonia (from 5.6% to 23.2%)** and **Murcia (from 4.1% to 12.7%)**. While PISA 2025 results for Spain can be fully included in reports, Catalonia's results are not reported separately due to its higher rate of student exclusion. **Murcia**'s results are reported, but readers should apply caution due to a potential upward bias.

(ii) Limited reporting with asterisk

Albania:

- **School response rate: 76% before and after replacement**. During the PISA 2025 Main Study data collection, schools with fewer than 21 PISA-eligible students were not contacted to conduct assessment sessions; as a result, these schools did not participate in PISA 2025. A non-response bias analysis was submitted by the National Centre, and a plausible range for the mean score in science was determined by simulating positive and negative selection scenarios as part of a potential-bias analysis. The sampled schools that did not participate in the assessment are likely to be disproportionately located in socio-economically disadvantaged and rural areas, serving populations with historically lower academic performance. Empirical evidence from prior cycles and from auxiliary contextual indicators suggests that these schools differ from participating schools in both socio-economic composition and academic outcomes. At the same time, even in a strong negative-bias scenario, the resulting bias is unlikely to exceed 7.5% of a standard deviation, and a plausible lower bound for the mean score in science is 428 score points.
- Although non-response adjustments have partially mitigated imbalances related to ISCED level and urbanicity, the complete absence of small schools implies a structural coverage gap that cannot be fully corrected. Therefore, the reporting of results for Albania in international reports is limited, with no trend reporting and questionnaire results being presented "below the line" in the result tables, in order to limit potentially unfair comparisons. Indeed, several aspects measured by the questionnaires may differ more markedly than performance scores between participating and non-participating schools.

The United States:

- **Overall exclusion rate: 6.9%.** This remained close to PISA 2022 (6.1%). After removing students with limited language proficiency, exclusions represent 5.4% of the desired target population in PISA 2025.
- **School response rate: 45% before replacement; and 54% after replacement. Student response rate: 76%.** Range-of-bias analyses based on best- and worst-case scenarios suggest that both school non-participation and student non-response could meaningfully affect results. In the most extreme cases, school non-participation could lead to differences of up to about ±15.4% of a standard deviation, and student non-response up to about ±15.9%. A non-response bias analysis was submitted at both the school and student levels. After accounting for replacement schools and adjusted weights, several observed characteristics (though not direct measures of school performance, which were not available) appeared similar between participating and non-participating schools. At the student level, the demographic profile of respondents closely resembled that of the originally selected student sample. However, because no data about student academic achievement or engagement were available, the strength of these findings is limited. As a result, it is not possible to rule out bias in PISA performance results, nor to determine its most likely direction.
- More than 40% of responding students in the United States were not administered the student questionnaire. This is due in roughly equal parts to decisions made at the state level, which introduce systematic gaps in coverage for questionnaire results, and mechanisms that can be expected to be unrelated to student characteristics (such as schools testing early in the testing window, when questionnaire administration was suspended at the national level). Because of this, questionnaire results are presented "below the line" in the result tables, to highlight the risk of distortions caused by the systematic exclusion of students in parts of the

country (of the 50 states and 1 federal district, 9 states were excluded). These results, however, are still included in the computation of OECD averages.

Limited reporting without asterisk

Uzbekistan:

- For Uzbekistan, a number of inconsistencies were identified in the mathematics and reading response data that require further investigation. These inconsistencies appear to be more frequent in some schools and regions, and undermine the comparability of the scale scores derived from these response data to other countries and over time. The response data for other domains (science and "learning in the digital world") do not show the same issues and can be used in reporting. Uzbekistan's results are therefore only reported in tables and figures based on science or on "learning in the digital world" data, as well as in any tables and figures based only on questionnaire data.

Viet Nam:

- Viet Nam transitioned to computer-based administration in PISA 2025, whereas in all previous participating cycles it used older paper-based instruments derived from PISA 2012. The uncertainty in the trend comparisons beyond linking errors remains undetermined. Therefore, Viet Nam's data are not included in performance trends analyses, while Viet Nam is included in all other analyses (e.g. analyses of performance in 2025, and all questionnaire-based analyses, including comparisons between 2025 and earlier cycles).

Guatemala and Paraguay also transitioned from paper-based to computer-based assessment in 2025, but used the newer paper-based instruments, based on the PISA for Development tests first implemented in 2017, in PISA 2022. These tests incorporated framework updates up to 2015; trend comparisons are possible but should be interpreted with caution, as the uncertainty extends beyond what is captured by the linking errors considered when testing for their statistical significance.

Data underlying the figures

The data referred to in this volume are presented in Annexes B, with all tables made available in greater detail on the PISA website (www.oecd.org/pisa). The following letters are used to denote missing data:

- a: The category does not apply in the country or economy concerned; data are therefore missing.
- c: There were too few observations to provide reliable estimates (i.e. there were fewer than 30 students or fewer than 5 schools with valid data).
- m: Data are not available. There was no observation in the sample; these data were not collected by the country or economy; or these data were collected but subsequently removed from the publication for technical reasons.
- w: Results were withdrawn at the request of the country or economy concerned.
- x: Data included in another category or column of the table (e.g. "x(2)" means that data are included in Column 2 of the table).

Coverage

This publication features data from 91 countries and economies, including all OECD Member countries and 53 non-OECD Member countries and economies (see "What is PISA?" for details). Specific territorial disclaimers and footnotes applicable to this publication are included in the copyright page.

"B-S-J-Z (China)" refers to the four PISA-participating provinces/municipalities of the People's Republic of China (hereafter "China"): Beijing, Shanghai, Jiangsu and Zhejiang.

The designation “Ukrainian regions (17 of 27)” refers to the 17 PISA-participating jurisdictions of Ukraine: Cherkasy Oblast, Kirovohrad Oblast, Poltava Oblast, Vinnytsia Oblast, Chernihiv Oblast, Kyiv Oblast, the City of Kyiv, Zhytomyr Oblast, Odesa Oblast, Chernivtsi Oblast, Ivano-Frankivsk Oblast, Khmelnytskyi Oblast, Lviv Oblast, Rivne Oblast, Ternopil Oblast, Volyn Oblast and Zakarpattia Oblast. Due to Russia’s large-scale aggression against Ukraine, the following 10 jurisdictions were not covered: Dnipropetrovsk Oblast, Donetsk Oblast, Kharkiv Oblast, Luhansk Oblast, Zaporizhzhia Oblast, Kherson Oblast, Mykolaiv Oblast, the Autonomous Republic of Crimea, the city of Sevastopol and Sumy Oblast.

PISA covers students aged between 15 years 3 months and 16 years 2 months at the time of assessment and who are enrolled in school and have completed at least 6 years of formal schooling, regardless of the type of institution in which they are enrolled, and whether they are in full-time or part-time education, whether they attend academic or vocational programmes, and whether they attend public or private schools or foreign schools within the country or economy (this is known as the “PISA target population”).

Specific restrictions to the coverage apply to the following entities:

- PISA 2025 results for the Kurdistan Region (Iraq) cover public schools only.
- PISA 2025 results for Lebanon cover all governorates except two that were most affected by the evolving conflicts in the Middle East.
- PISA 2025 results for the Palestinian Authority do not cover schools most affected by the evolving conflicts in the Middle East. For the purpose of trend analyses in this report, PISA 2022 results were recalculated to match the same coverage as PISA 2025.

International averages

The OECD average corresponds to the arithmetic mean of the respective country estimates. It was calculated for most indicators presented in this report.

In this publication, the OECD average is generally used when the focus is on comparing performance across education systems. In the case of some countries, data may not be available for specific indicators, or specific categories may not apply. Therefore, readers should keep in mind that the term “OECD average” refers to the OECD Member countries included in the respective comparisons. In cases where data are not available or do not apply for all sub-categories of a given population or indicator, the “OECD average” is not necessarily computed on a consistent set of countries across all columns of a table.

In analyses involving data from multiple years, several OECD averages may be reported in the same table, typically based on consistent sets of OECD Member countries; however, where data are missing or not applicable across sub-categories, consistency may vary across columns. For instance, the “OECD average-35” includes only 35 OECD Member countries that have non-missing values across all the assessments for which this average itself is non-missing. This restriction allows for valid comparisons of the OECD average over time.

The number in the label used in figures and tables indicates the number of countries included in the average:

- OECD average: Arithmetic mean across all OECD Member countries.
- OECD average-35: Arithmetic mean across all OECD Member countries excluding Costa Rica, Luxembourg and Spain. This average allows performance comparisons in science, reading and mathematics since PISA 2015.
- OECD average-29: Arithmetic mean across all OECD Member countries excluding Colombia, Costa Rica, Japan, Korea, Luxembourg, Mexico, Poland, Spain and Türkiye. This average allows performance comparisons in science, reading and mathematics since PISA 2015 among immigrant and first- and second-generation immigrant students. This average is used only in analyses related to immigration.
- OECD average-23: Arithmetic mean across all OECD Member countries excluding Austria, Chile, Colombia, Costa Rica, Estonia, Israel, Lithuania, Luxembourg, the Netherlands, the Slovak Republic, Slovenia, Spain,

Türkiye, the United Kingdom and the United States. This average allows performance comparisons in science, reading and mathematics across all PISA cycles (from PISA 2000 to PISA 2025).

Rounding figures

Because of rounding, some figures in tables may not add up exactly to the totals. Totals, differences and averages are always calculated on the basis of exact numbers and are rounded only after calculation.

All standard errors in this publication have been rounded to one or two decimal places. Where the value 0.0 or 0.00 is shown, this does not imply that the standard error is zero, but that it is smaller than 0.05 or 0.005, respectively.

Reporting student data

The report uses "15-year-olds" as shorthand for the PISA target population. See the details in the earlier section on coverage.

Reporting school data

The principals of the schools in which students were assessed provided information on their schools' characteristics by completing a school questionnaire. Where responses from school principals are presented in this publication, they are weighted so that they are proportionate to the number of 15-year-olds enrolled in the school.

Focusing on statistically significant differences

This volume discusses only statistically significant differences or changes. These are denoted in darker colours in figures and in bold font in tables. Unless otherwise specified, the significance level is set to 5%. See Annex A3 for further information.

Database used

The analyses presented in this report are based on the June 2026 version of the data. For details of updates incorporated into the Public Use File released on 8 September 2026, see the *PISA 2025 Technical Report* (OECD, forthcoming[2]).

Questionnaire indices

The detailed descriptions of questionnaire indices presented in this volume can be found in Chapter 22 of *the PISA 2025 Technical Report* (OECD, forthcoming[2]).

Abbreviations used in this report

ESCS	PISA index of economic, social, and cultural status
GDP	Gross domestic product
ICT	Information and communications technology
ISCED	International Standard Classification of Education
ISCO	International Standard Classification of Occupations
PPP	Purchasing power parity
Score dif.	Score-point difference
S.D.	Standard deviation
SDGs	Sustainable Development Goals
S.E.	Standard error
% dif.	Percentage-point difference

ISO codes for countries and economies used in this report

Albania	ALB
Argentina	ARG
Armenia	ARM
Australia	AUS
Austria	AUT
Azerbaijan	AZE
Belgium	BEL
Brazil	BRA
Brunei Darussalam	BRN
B-S-J-Z (China)	QCI
Bulgaria	BGR
Cambodia	KHM
Canada	CAN
Chile	CHL
Colombia	COL
Costa Rica	CRI
Croatia	HRV
Cyprus	QCY
Czechia	CZE
Denmark	DNK
Dominican Republic	DOM
Dushanbe (Tajikistan)	QTJ
Ecuador	ECU
El Salvador	SLV
Estonia	EST
Finland	FIN
France	FRA
Georgia	GEO
Germany	DEU
Greece	GRC
Guatemala	GTM

Hong Kong (China)	HKG
Hungary	HUN
Iceland	ISL
Indonesia	IDN
Ireland	IRL
Israel	ISR
Italy	ITA
Japan	JPN
Jordan	JOR
Kazakhstan	KAZ
Kenya	KEN
Korea	KOR
Kosovo	KSV
Kurdistan Region (Iraq)	QKI
Kyrgyzstan	KGZ
Latvia	LVA
Lebanon	LBN
Lithuania	LTU
Luxembourg	LUX
Macao (China)	MAC
Malaysia	MYS
Malta	MLT
Mauritius	MUS
Mexico	MEX
Moldova	MDA
Mongolia	MNG
Montenegro	MNE
Morocco	MAR
Netherlands	NLD
New Zealand	NZL
North Macedonia	MKD

Norway	NOR
Palestinian Authority	PSE
Paraguay	PRY
Peru	PER
Philippines	PHL
Poland	POL
Portugal	PRT
Qatar	QAT
Romania	ROU
Rwanda	RWA
Saudi Arabia	SAU
Serbia	SRB
Singapore	SGP
Slovak Republic	SVK
Slovenia	SVN
Spain	ESP
Sweden	SWE
Switzerland	CHE
Chinese Taipei	TAP
Thailand	THA
Türkiye	TUR
Ukrainian regions (17 of 27)	QUA
United Arab Emirates	ARE
United Kingdom	GBR
United States	USA
Uruguay	URY
Uzbekistan	UZB
Viet Nam	VNM
Zambia	ZMB

Following OECD data regulations, a visual distinction between countries (in black) and territories (in blue) has been used in all charts to reduce the risk of data misinterpretation.

Box 1. Interpreting differences in PISA scores

PISA scores do not have a substantive meaning, as they are not physical units such as metres or grams. Instead, they are set in relation to the variation in results observed across all test participants. There is, theoretically, no minimum or maximum score in PISA; rather, the results are scaled to fit approximately normal distributions (i.e. means around 500 score points, standard deviations around 100 score points). In statistical terms, a one-point difference on the PISA scale therefore corresponds to an effect size (Cohen's d) of 0.01; and a 10-point difference to an effect size of 0.10.

Interpreting large differences in scores: Proficiency levels

PISA scales are divided into proficiency levels. For example, for PISA 2025, the range of difficulty of science items is represented by seven levels of science proficiency: the simplest items correspond to Level 1b; Levels 1a, 2, 3, 4, 5 and 6 correspond to increasingly difficult items. Individuals who are proficient within the range of Level 1b are likely able to complete Level 1b items but are unlikely to be able to complete items at higher levels. See Chapter 2 for a detailed description of proficiency levels in science, reading and mathematics.

In science, each proficiency level corresponds to a range of about 75 score points; in reading the difference between the cut points for each proficiency level is about 73 score points, and in mathematics it is about 62 score points. Hence, score-point differences of that magnitude can be interpreted as the differences in described skills and knowledge between successive proficiency levels.

Interpreting small differences in scores: Statistical significance

Smaller differences in PISA scores cannot be expressed in terms of the difference in skills and knowledge between proficiency levels. However, they can still be compared with each other by means of verifying their "statistical significance".

A difference is called "statistically significant" if it is unlikely that such a difference can be observed in the estimates based on samples when, in fact, no true difference exists in the populations from which the samples are drawn. The results of the PISA assessments are "estimates" because they are obtained from samples of students rather than from a census of all students (i.e. which introduces a "sampling error"), and because they are obtained using a limited set of assessment tasks rather than all possible assessment tasks (i.e. which introduces a "measurement error").

It is possible to determine the magnitude of the uncertainty associated with the estimate and to represent it as a "confidence interval", i.e. a range defined in such a way that if the true value lies above its upper bound or below its lower bound, an estimate different from the reported estimate would be observed only with a small probability (typically less than 5%). The confidence interval needs to be taken into account when making comparisons between estimates so that differences that may arise simply due to the sampling error and measurement error are not interpreted as real differences.

Interpreting differences in scores across PISA assessments

When comparing PISA performance results across different assessment years, "link errors" must be used to ensure comparability. The link error represents uncertainty around scale values ("is a score of 432 in PISA 2025 the same as 432 in PISA 2022?") and is therefore independent of the size of the student sample. For example, for comparisons between science results in PISA 2025 and science results in 2022, the link error corresponds to 2.9 score points. For detailed information, see Annex A3.

Interpreting differences in scores in terms of learning gains over a year of schooling

Knowing the typical learning gains that students make as they progress from one grade-level to the next can be useful for interpreting differences in PISA results. In science, reading and mathematics, 20 points represents the average annual pace of learning of 15-year-olds in countries that participate in PISA. Box I.2.3 in Chapter 2 explores this topic.

Further documentation

For further information on the PISA assessment instruments and the methods used in PISA, see the *PISA 2025 Assessment and Analytical Framework* (OECD, 2026[3]) and *PISA 2025 Technical Report* (OECD, forthcoming[2]) .

StatLinks

This report has StatLinks for tables and graphs at the end of the chapters. To download the corresponding Excel® spreadsheet, just type the link into your Internet browser, starting with the https://doi.org prefix, or click on the link from the e-book version.

References

OECD (2026), *PISA 2025 Assessment and Analytical Framework*, PISA, OECD Publishing, Paris, https://doi.org/10.1787/86c36975-en. [3]

OECD (2025), *PISA 2025 Technical Standards*, OECD Publishing, Paris, https://www.oecd.org/content/dam/oecd/en/about/programmes/edu/pisa/publications/technical-standards/PISA_2025_Technical_Standards.pdf. [1]

OECD (forthcoming), *PISA 2025 Technical Report*, OECD Publishing, Paris. [2]

Executive Summary

As the world is changing at an unprecedented pace, young people need the knowledge, skills and agency to succeed in life and work, and to engage in lifelong learning in response to social and economic demands. Schools, families and communities all play a key role in supporting student engagement and educational success.

What students know and can do

PISA 2025 assessed science, reading, mathematics and computational problem solving.

- The Chinese jurisdictions of Beijing, Shanghai, Jiangsu and Zhejiang [referred throughout this report as B-S-J-Z (China)] and Singapore were the highest-performers across science, mathematics and reading in 2025. Additionally, Estonia, Japan, Korea, Macao (China), Chinese Taipei and the United Kingdom were among the top-10 performing education systems in all three domains.
- Around three-quarters of students[1] demonstrated at least baseline proficiency in science, i.e. they can use scientific knowledge and evidence to explain familiar phenomena and interpret straightforward data.
- In computational problem solving, students in Macao (China), Singapore, B-S-J-Z (China) and Japan achieved the highest scores (572, 563, 560 and 557 points, respectively), while students in Hong Kong (China), Malaysia, Brunei Darussalam, the Philippines, Macao (China) and Iceland performed over 30 points above expectations based on their science performance.
- PISA 2025 recorded the lowest OECD-average performance observed so far in science, reading and mathematics. Reading has declined after peaking around 2012, while science has declined more gradually over the past decade, and mathematics has fallen especially sharply after 2018.
- In reading, PISA saw a decline in the very skills that matter most in the AI age: evaluating information, making connections across multiple sources, and thinking critically about what we read. In turn, the share of "hasty readers" – students who rush through texts and give quick but incorrect answers – almost doubled between 2018 and 2025.
- However, among OECD countries, Costa Rica, the Slovak Republic, Türkiye and the United Kingdom have seen science scores go up since 2022. Among other countries and economies, improvements were seen in Cambodia, El Salvador, Georgia, Jordan, Mongolia, Montenegro, the Philippines, Saudi Arabia, Thailand, the United Arab Emirates, Uruguay and Uzbekistan.
- The world is no longer divided between rich and well-educated nations and poor and badly-educated ones: national wealth accounts for just half of the variation in countries' performance. In the same vein, good policies and wise spending choices are far stronger predictors for performance on PISA than just how much countries spend per student: At USD 288 521 per student, Luxembourg is by far the biggest spender on education, but it posted lower average science scores than Ireland, France and Italy, all of which invested less than half that amount per student.

[1] Unless a country or economy is explicitly identified, all figures refer to the average across OECD countries.

How students approach learning

This volume focuses on various dimensions of student engagement in learning, including motivation (**curiosity** and **perseverance**), agency (**goal setting** and **help seeking**) and learning-related attitudes (**growth mindset**, **beliefs about the nature of science** and **cognitive adaptability**).

- On average, 57% of students do not find learning new things boring. However, since 2022, this share decreased in 60 systems, with over 10-percentage-point decreases in 30 systems. No system showed the opposite trend.
- On average, 60% of students reported putting in extra effort when work becomes challenging. Since 2022, this share decreased in 32 systems, but increased in 17, with the largest increases in Malaysia and Indonesia.
- Girls generally reported higher levels of curiosity, perseverance, help seeking, goal setting and growth mindset, while boys tend to report higher cognitive adaptability.
- Socio-economically advantaged students reported more engagement across all dimensions examined than disadvantaged students.
- These engagement dimensions are positively associated with science performance and with each other: students reporting higher levels in one dimension tend to report higher levels in others.
- Education systems with larger declines in reading performance also tend to show larger declines in engagement.

Safe and fair learning environment

- Students' sense of belonging at school has improved since 2022. In 39 systems, a larger share of students reported feeling that they belong at school, and fewer students reported feeling lonely at school in 48 systems.
- Disciplinary climate in science lessons improved between 2015 and 2025 in 37 education systems, especially remarkable in Korea and Croatia; this is associated with stable or improved science performance.
- Bullying is associated with lower student performance and sense of belonging. Cyberbullying is relatively rare (3%) but is linked to the largest performance gaps.
- Students reported slightly more truancy and lateness, on average, compared to 2018, reverting the positive trends observed in 2022.
- Socio-economic background remains strongly associated with student achievement, accounting for 12% of within-country variation in science performance.
- Between 2022 and 2025, narrowing of socio-economic gaps in performance largely reflected declines among advantaged students rather than improvements among disadvantaged students.
- Some education systems, such as B-S-J-Z (China), Canada*, Estonia, Ireland, Japan, Korea and Macao (China), demonstrated both socio-economic fairness and strong performance.

Digitalisation and AI

- While limited or moderate use of digital devices for learning at school is often associated with better outcomes, when they are used for leisure at school, the relationship reverses sharply, with substantially lower levels of student performance.
- On average, 28% of students reported that their peers are distracted by the use of digital devices during most or every science lesson. In B-S-J-Z (China), Japan and Korea, fewer than 10% of students reported such distraction.
- In schools with clear policies on mobile phone use – whether through bans or well-defined guidelines – fewer students are distracted by digital devices.

- The relationship between AI use and performance is complex. Students who do not use AI for specific schoolwork tasks outperform those who do, while weekly users and non-users of AI for general purposes perform similarly. Students tend to perform slightly better when frequent AI use is paired with opportunities to develop AI literacy skills. However, these opportunities are more common among advantaged students, risking a growing AI divide.

Supportive families and schools

- In half of countries and economies, students reported more teacher support in science lessons – which remains positively associated with science performance and learning attitudes – compared to 2015. The highest increases are observed in Korea, Japan, Indonesia, Croatia, the Slovak Republic, Thailand and Viet Nam.
- Students reported less family support compared to 2022 in almost all countries and economies, particularly among boys and disadvantaged students.
- The provision of study help, such as peer-to-peer tutoring, is associated with higher science performance.
- Improvements in teacher shortages and student-to-teacher ratios have been reported by school principals compared to 2022, although concerns remain higher than in 2018.
- Principals also reported higher concerns about material shortages and unpreparedness for digital learning, partly offsetting improvements between 2018 and 2022.

Student engagement in environmental challenges

- On average, 74% of students achieved at least baseline proficiency (Level 2) in environmental science.
- Higher-performing students tend to report stronger environmental awareness, personal agency and belief in collective efficacy.
- Over 90% of students in Viet Nam and Indonesia are interested in contributing to environmental protection through their future careers, while it is 62% on average and particularly prevalent among girls, socio-economically advantaged students, higher-performing students and students with pro-environmental attitudes.

Table I.1. Snapshot of performance in science, reading, mathematics and computational problem-solving

	Mean performance in PISA 2025				Short-term change in mean performance (PISA 2022 to PISA 2025)			Top-performing and low-performing students	
	Science	Reading	Mathematics	Computational problem solving	Science	Reading	Mathematics	Share of top performers (Level 5 or 6) in science, reading or mathematics	Share of low performers (Below Level 2) in science, reading and mathematics
	Mean score	Mean score	Mean score	Mean score	Score dif.	Score dif.	Score dif.	%	%
OECD average	482	461	463	500	-3	**-14**	**-9**	11.9	19.7
B-S-J-Z (China)	597	527	612	560	m	m	m	55.5	1.8
Singapore	560	535	563	563	-2	**-8**	**-12**	42.3	6.8
Macao (China)	541	501	549	572	-2	**-9**	-3	30.8	5.2
Chinese Taipei	540	508	546	551	2	-7	-1	35.0	9.1
Japan	538	503	525	557	-9	**-13**	-10	27.1	8.8
Estonia	527	499	508	541	1	**-12**	-2	18.0	7.4
Korea	526	501	522	538	-2	**-15**	-5	28.1	9.4
United Kingdom	511	494	488	523	**12**	0	-1	18.2	12.0
Canada*	510	490	485	525	-5	**-17**	**-12**	17.4	12.0
New Zealand*	509	497	480	531	5	-4	1	20.8	13.8
Australia	509	491	478	532	2	**-7**	**-10**	18.2	14.0
Finland	504	474	469	507	-7	**-16**	**-15**	14.0	15.7
United States*	502	490	463	513	2	**-14**	-2	17.8	17.5
Switzerland	501	470	499	520	-1	**-13**	**-9**	18.1	15.0
Ireland	500	500	480	511	-4	**-16**	**-12**	12.7	11.2
Austria	497	467	477	509	6	**-13**	**-10**	12.6	16.5
Hong Kong (China)	496	480	522	545	**-25**	**-20**	**-19**	22.9	10.0
Poland	495	482	484	507	-4	-7	-5	14.4	14.0
Türkiye	494	472	462	473	**18**	**16**	**8**	11.1	15.4
Czechia	490	468	477	517	-7	**-20**	**-10**	12.8	15.4
Belgium	490	466	480	508	-1	**-13**	**-10**	13.4	18.1
Lithuania	488	464	470	512	3	**-8**	-5	8.7	15.2
Germany	486	465	464	498	-7	**-15**	**-11**	14.0	20.7
Netherlands*	485	441	483	506	-3	**-18**	-9	15.7	21.3
Sweden	485	466	464	503	-8	**-21**	**-18**	14.1	19.4
Slovenia	484	445	460	486	**-16**	**-24**	**-25**	10.1	18.8
France	483	456	458	497	-4	**-18**	**-16**	9.8	21.3
Italy	483	474	468	490	6	-7	-3	10.1	15.8
Portugal	482	462	460	501	-3	**-15**	**-12**	9.0	18.6
Hungary	480	452	459	495	-6	**-21**	**-13**	7.6	19.7
Denmark	478	460	471	506	**-16**	**-29**	**-19**	8.9	16.0
Spain	477	451	457	499	-7	**-23**	**-16**	7.0	18.4
Croatia	476	453	455	464	-6	**-22**	**-8**	7.8	20.3
Slovak Republic	475	448	469	497	**13**	1	5	11.0	21.1
Luxembourg	474	443	458	506	m	m	m	11.4	25.0
Norway*	470	453	452	491	-8	**-24**	**-17**	9.7	22.0
Latvia	468	430	460	507	**-25**	**-45**	**-23**	6.7	21.6
United Arab Emirates	458	433	453	476	**26**	**15**	**21**	10.3	26.6
Viet Nam	457	392	443	461	m	m	m	4.2	26.0
Malta	453	415	439	463	**-13**	**-31**	**-27**	8.3	29.4
Ukrainian regions (17 of 27)	448	418	431	478	-1	-8	-9	3.6	29.3
Uruguay	445	423	405	462	**9**	**-7**	-4	2.8	30.2
Chile	442	436	403	466	-1	**-12**	**-9**	2.6	28.8
Israel	442	436	433	444	**-23**	**-38**	**-25**	8.8	29.0
Iceland	441	422	450	490	-6	**-14**	**-9**	5.9	27.6
Brunei Darussalam	439	426	435	496	-6	-4	**-7**	3.4	33.0
Mauritius	438	405	407	m	m	m	m	3.0	35.1
Uzbekistan	438	m	m	402	**83**	m	m	m	m
Montenegro	435	418	411	423	**32**	**13**	**5**	1.8	33.0
Albania*	435	408	433	437	m	m	m	1.9	27.8

	Mean performance in PISA 2025				Short-term change in mean performance (PISA 2022 to PISA 2025)			Top-performing and low-performing students	
	Science	Reading	Mathematics	Computational problem solving	Science	Reading	Mathematics	Share of top performers (Level 5 or 6) in science, reading or mathematics	Share of low performers (Below Level 2) in science, reading and mathematics
	Mean score	Mean score	Mean score	Mean score	Score dif.	Score dif.	Score dif.	%	%
Qatar	434	418	416	452	2	-1	2	5.0	35.8
Greece	434	423	424	461	-7	**-16**	-6	3.3	31.4
Thailand	432	392	407	476	**23**	**13**	**13**	1.2	36.9
Serbia	429	415	417	437	**-18**	**-26**	**-23**	3.4	34.1
Romania	425	413	419	442	-3	**-16**	-9	4.8	38.5
Mongolia	424	374	419	443	**12**	-4	-6	1.4	38.6
Costa Rica	424	416	387	452	**13**	1	3	0.9	36.7
Georgia	422	384	416	413	**38**	**10**	**26**	2.3	36.2
Moldova	422	404	410	452	5	-7	-4	1.5	39.0
Bulgaria	421	387	405	425	0	**-18**	**-12**	4.1	41.9
Kazakhstan	420	385	414	449	-4	-1	**-12**	1.4	41.1
Malaysia	419	393	397	484	3	5	**-11**	0.8	42.3
Colombia	414	399	381	432	3	-9	-2	1.1	43.9
Mexico	414	408	388	453	4	-7	**-7**	0.5	41.8
Saudi Arabia	413	387	390	426	**23**	5	1	0.6	44.0
Cyprus	411	379	412	427	0	-2	**-7**	4.6	43.5
Azerbaijan	409	374	422	388	m	m	m	4.8	42.9
Brazil	409	408	377	406	6	-2	-2	1.8	43.8
Jordan	407	363	388	408	**32**	**20**	**26**	0.3	48.1
Peru	406	390	382	436	-2	**-18**	**-9**	0.5	46.6
Ecuador	393	385	366	422	m	m	m	0.2	53.6
Argentina	393	389	367	403	**-13**	**-12**	**-11**	1.2	48.8
Indonesia	389	365	364	427	6	7	-2	0.1	60.9
El Salvador	385	366	346	401	**12**	2	3	0.2	61.3
Cambodia	382	347	366	m	**35**	**18**	**29**	0.0	61.7
North Macedonia	378	357	380	389	-1	-1	**-9**	0.9	55.8
Philippines	373	367	371	434	**17**	**20**	**16**	0.3	64.3
Lebanon	372	331	377	358	m	m	m	1.1	58.4
Armenia	369	348	376	354	m	m	m	0.8	58.1
Kyrgyzstan	363	344	364	388	m	m	m	0.0	70.9
Dominican Republic	361	346	339	379	0	-6	0	0.0	69.3
Palestinian Authority	359	350	354	393	**-17**	-6	**-18**	0.1	68.4
Morocco	358	321	355	374	-7	**-18**	**-10**	0.1	73.2
Kosovo	357	340	350	359	0	-2	**-5**	0.0	73.8
Paraguay	355	352	334	352	**-13**	**-21**	-4	0.1	69.4
Kurdistan Region (Iraq)	352	312	339	m	m	m	m	0.0	76.8
Guatemala	351	337	334	369	**-22**	**-37**	**-10**	0.0	75.6
Zambia	337	325	314	m	m	m	m	0.2	72.5
Kenya	335	320	326	278	m	m	m	0.0	82.1
Dushanbe (Tajikistan)	334	368	382	m	m	m	m	0.0	67.2
Rwanda	317	301	312	m	m	m	m	0.0	86.5

* Caution is required when interpreting estimates because one or more PISA sampling standards were not met (see Reader's Guide).
Notes: Values that are statistically significant are indicated in bold (see Annex A3).
The OECD average does not include Costa Rica, Luxembourg and Spain for short-term change in performance.
Countries/economies with a mean performance/share of top performers **above** the OECD average.
Countries/economies with a share of low performers **below** the OECD average.
Countries/economies with a mean performance/share of top/low performers **not significantly different** from the OECD average.
Countries/economies with a mean performance/share of top performers **below** the OECD average.
Countries/economies with a share of low performers **above** the OECD average.
Countries and economies are ranked in descending order of the mean performance in science in PISA 2025.
Source: OECD, PISA 2025 Database, Tables I.B1.2a.1, I.B1.2a.2, I.B1.2a.3, I.B1.2a.4,I.B1.2a.21, I.B1.2a.22, I.B1.2a.36, I.B1.2a.37 and I.B1.2a.38.

Table I.2. Snapshot of socio-economic disparities and immigrant background in science performance

	Socio-economic disparities in science performance in PISA 2025			Short-term change in science performance, by socio-economic status (PISA 2022 to PISA 2025)			Science performance by immigrant background		
	Strength: Percentage of variance in science performance explained by ESCS[1]	Percentage of disadvantaged students who are academically resilient[2]	Difference between advantaged[3] and disadvantaged students	Disadvantaged students[4]	Advantaged students[4]	Difference between advantaged and disadvantaged students[5]	Non-immigrant students	Immigrant students	Difference between non-immigrant and immigrant students
	%	%	Score dif.	Score dif.	Score dif.	Score dif.	Mean score	Mean score	Score dif.
OECD average	11.6	11.9	**85**	5	**-8**	**-13**	497	455	**-43**
Kenya	0.2	25.7	8	m	m	m	352	294	**-58**
Cambodia	0.5	22.4	**9**	**36**	**37**	0	388	347	**-41**
Uzbekistan	1.3	22.0	**22**	**85**	**87**	2	444	413	**-31**
Kurdistan Region (Iraq)	1.5	21.7	**19**	m	m	m	364	351	**-14**
Rwanda	3.1	22.4	**30**	m	m	m	329	365	**36**
United Arab Emirates	3.3	13.9	**50**	**40**	**19**	**-21**	412	507	**94**
Macao (China)	3.7	18.7	**45**	1	**11**	10	533	550	**16**
Qatar	4.0	14.7	**50**	**21**	**-13**	**-34**	393	477	**85**
Jordan	4.1	17.5	**42**	**37**	**34**	-4	413	411	-1
Armenia	4.3	21.7	**39**	m	m	m	380	363	**-17**
Georgia	4.4	18.0	**46**	**55**	**29**	**-27**	431	370	**-62**
Kazakhstan	4.6	17.9	**41**	-2	-3	-1	425	412	**-13**
Kosovo	4.8	17.8	**40**	2	3	1	366	352	-13
Palestinian Authority	5.4	18.1	**43**	-6	-12	-5	371	335	**-36**
Latvia	5.5	15.5	**58**	**-12**	**-27**	**-15**	479	404	**-75**
Saudi Arabia	5.6	14.2	**47**	**15**	**17**	3	414	452	**38**
Canada*	6.0	14.6	**59**	1	**-13**	**-14**	518	514	-4
Kyrgyzstan	6.1	17.0	**45**	m	m	m	372	342	**-30**
Hong Kong (China)	6.2	15.2	**69**	**-27**	-10	17	498	500	2
Malta	6.3	14.6	**69**	3	**-19**	**-22**	463	461	-2
Cyprus	6.6	15.0	**73**	**12**	4	-8	423	445	**22**
North Macedonia	6.8	18.1	**63**	**17**	5	**-12**	398	315	**-84**
Thailand	7.0	16.7	**55**	**29**	**19**	-11	437	370	**-67**
Iceland	7.1	13.3	**66**	**13**	-5	**-18**	456	390	**-65**
Azerbaijan	7.1	15.5	**63**	m	m	m	421	374	**-48**
Dushanbe (Tajikistan)	7.5	14.5	**46**	m	m	m	336	342	6
Japan	7.6	13.0	**71**	-7	-7	0	540	514	-26
Lebanon	7.7	16.9	**74**	m	m	m	408	322	**-87**
Korea	7.7	12.8	**69**	2	-15	-17	530	428	**-101**
Lithuania	7.9	13.7	**63**	**16**	-9	**-25**	494	463	**-31**
Ukrainian regions (17 of 27)	8.0	14.9	**66**	11	-3	-14	456	375	**-81**
Montenegro	8.2	14.3	**65**	**40**	**34**	-6	438	454	**15**
Norway*	8.2	12.2	**77**	-4	**-17**	**-13**	484	440	**-44**
Slovenia	8.5	13.3	**71**	-5	**-25**	**-20**	499	437	**-62**
United Kingdom	8.5	14.4	**80**	**13**	1	-12	517	517	0
Indonesia	8.6	15.4	**47**	2	**17**	15	392	328	**-64**
Albania*	8.7	13.3	**63**	**52**	**67**	**15**	439	m	m
Finland	9.0	13.5	**78**	0	**-12**	**-11**	517	429	**-88**
Serbia	9.1	14.1	**70**	-9	**-17**	-7	438	430	**-8**
Morocco	9.1	16.4	**55**	**-13**	5	18	363	329	**-34**
Israel	9.2	13.8	**82**	7	**-30**	**-37**	466	431	**-35**
Spain	9.2	13.2	**71**	-4	**-13**	-8	489	447	**-43**
Australia	9.5	13.2	**80**	10	**-12**	**-22**	511	517	6
Ireland	9.6	14.0	**72**	-1	-7	-6	503	496	-7
Denmark	9.6	13.5	**69**	-9	**-20**	-12	490	427	**-63**
Estonia	9.6	11.7	**68**	1	-7	-8	534	487	**-47**
B-S-J-Z (China)	9.7	14.4	**72**	m	m	m	598	544	**-54**
Greece	10.4	12.3	**76**	-5	-11	-5	448	387	**-61**
Dominican Republic	10.4	12.4	**69**	-2	13	**15**	372	329	**-42**
Türkiye	10.4	12.6	**81**	**17**	**24**	7	500	441	**-60**
United States*	11.0	10.8	**104**	6	2	-4	504	515	11
New Zealand*	11.1	12.6	**89**	**20**	4	**-17**	517	515	-2
Poland	11.3	12.1	**82**	4	-8	-13	502	447	**-55**

	Socio-economic disparities in science performance in PISA 2025			Short-term change in science performance, by socio-economic status (PISA 2022 to PISA 2025)			Science performance by immigrant background		
	Strength: Percentage of variance in science performance explained by ESCS[1]	Percentage of disadvantaged students who are academically resilient[2]	Difference between advantaged[3] and disadvantaged students	Disadvantaged students[4]	Advantaged students[4]	Difference between advantaged and disadvantaged students[5]	Non-immigrant students	Immigrant students	Difference between non-immigrant and immigrant students
	%	%	Score dif.	Score dif.	Score dif.	Score dif.	Mean score	Mean score	Score dif.
Italy	11.3	12.5	**80**	11	3	-8	491	445	**-46**
Chinese Taipei	11.4	10.9	**91**	2	-8	-10	543	489	**-55**
Chile	11.4	13.5	**76**	6	2	-3	451	420	**-31**
Argentina	11.8	14.2	**82**	-7	-1	6	402	386	**-16**
Mongolia	11.8	12.8	**71**	**19**	8	-11	429	318	**-111**
Croatia	11.9	12.0	**84**	-7	2	9	481	459	**-22**
Mexico	11.9	11.6	**68**	3	3	0	418	369	**-49**
Paraguay	12.0	12.3	**72**	**-17**	-11	6	366	360	-6
Sweden	12.0	9.3	**92**	-1	**-21**	**-20**	508	439	**-69**
Singapore	12.5	10.7	**91**	4	**-12**	**-16**	554	583	**29**
Mauritius	12.5	11.4	**94**	m	m	m	m	m	m
Brunei Darussalam	12.8	10.7	**89**	-4	**-12**	-8	437	484	**46**
Philippines	12.9	11.3	**76**	10	**36**	**26**	381	280	**-101**
Portugal	13.3	10.8	**92**	-2	-3	0	493	454	**-39**
Moldova	13.4	11.2	**84**	4	7	3	429	397	**-32**
France	13.5	11.0	**100**	**13**	-8	**-21**	502	445	**-57**
Switzerland	13.6	10.1	**99**	10	**-11**	**-21**	527	473	**-54**
Peru	13.7	10.1	**78**	6	-6	-12	411	378	**-33**
El Salvador	13.7	10.3	**73**	8	14	6	390	359	**-31**
Bulgaria	13.8	11.6	**101**	12	3	-9	440	377	**-63**
Netherlands*	13.9	10.4	**105**	-2	-8	-6	500	438	**-63**
Austria	14.0	9.9	**98**	**20**	-6	**-26**	519	452	**-67**
Belgium	14.6	9.9	**98**	**17**	-5	**-22**	509	456	**-53**
Uruguay	14.9	11.9	**87**	**14**	8	-6	449	460	11
Czechia	15.0	10.4	**96**	9	**-13**	**-22**	498	440	**-58**
Malaysia	15.7	10.3	**82**	3	8	5	423	381	**-43**
Brazil	15.9	9.6	**96**	7	12	5	420	334	**-86**
Guatemala	17.1	10.1	**76**	**-26**	-6	**20**	364	329	**-35**
Colombia	17.4	9.2	**93**	2	5	4	424	376	**-48**
Viet Nam	17.5	11.3	**87**	m	m	m	460	447	-13
Hungary	17.9	10.1	**103**	6	**-16**	**-23**	484	474	-10
Germany	19.0	8.5	**125**	-7	-3	4	521	438	**-83**
Ecuador	20.4	9.1	**86**	m	m	m	397	399	1
Slovak Republic	20.7	9.6	**114**	**31**	7	**-24**	484	443	**-40**
Luxembourg	21.7	6.8	**130**	m	m	m	494	473	**-21**
Romania	21.7	7.0	**122**	2	1	-1	434	374	**-61**
Zambia	37.8	3.8	**177**	m	m	m	348	327	-22
Costa Rica	m	m	m	m	m	m	m	m	m

* Caution is required when interpreting estimates because one or more PISA sampling standards were not met. For Albania and the United States, particular caution is required when interpreting questionnaire results due to a coverage issue (see Reader's Guide).

1. ESCS refers to the PISA index of economic, social and cultural status.
2. Academically resilient students are disadvantaged students who score in the top quarter of performance in science amongst students in their own country/economy.
3. A socio-economically advantaged (disadvantaged) student is a student in the top (bottom) quarter of ESCS in his or her own country/economy.
4. A positive (negative) score difference indicates that science performance improved (declined) among disadvantaged or advantaged students between PISA 2022 and PISA 2025.
5. A positive (negative) score difference indicates that the difference between advantaged and disadvantaged students in science performance is larger (smaller) in PISA 2025 than in PISA 2022.

Notes: Values that are statistically significant are indicated in bold (see Annex A3).
The OECD average does not include Costa Rica, Luxembourg and Spain for short-term change in performance.
The OECD average does not include Colombia, Costa Rica, Japan, Korea, Luxembourg, Mexico, Poland, Spain and Türkiye for performance by immigrant background.
Countries/economies with a strength of socio-economic gradient **below** the OECD average.
Countries/economies with a share of resilient students/mean performance **above** the OECD average.
Countries/economies with a strength of socio-economic gradient/share of resilient students/mean performance **not significantly different** from the OECD average.
Countries/economies with a strength of socio-economic gradient **above** the OECD average.
Countries/economies with a share of resilient students/mean performance **below** the OECD average.
Countries and economies are ranked in ascending order of the percentage of variance in science performance explained by ESCS.
Source: OECD, PISA 2025 Database, Tables I.B1.2b.2, I.B1.2b.22 and I.B1.2d.7.

Table I.3. Snapshot of gender gaps in performance

	Science performance			Reading performance			Mathematics performance		
	Girls	Boys	Difference between boys and girls	Girls	Boys	Difference between boys and girls	Girls	Boys	Difference between boys and girls
	Mean score	Mean score	Score dif.	Mean score	Mean score	Score dif.	Mean score	Mean score	Score dif.
OECD average	483	481	**-1**	476	446	**-30**	456	470	**13**
Rwanda	306	332	**26**	298	304	**6**	302	325	**23**
Kenya	322	346	**24**	322	319	-3	315	336	**20**
Hong Kong (China)	487	503	**16**	486	474	**-12**	513	530	**17**
B-S-J-Z (China)	590	604	**14**	530	523	**-7**	602	622	**21**
Zambia	330	344	14	326	324	-2	307	321	14
Mexico	407	420	**13**	414	402	**-12**	380	396	**16**
United Kingdom	505	517	**12**	501	488	**-14**	475	499	**24**
Costa Rica	418	430	**11**	423	409	**-14**	376	398	**22**
Peru	400	411	**11**	399	382	**-17**	376	389	**13**
Japan	533	542	**10**	510	496	**-14**	517	533	**16**
Guatemala	347	356	**9**	342	333	**-9**	330	339	**9**
Chile	438	447	**9**	446	425	**-21**	394	411	**18**
United States*	498	506	8	501	477	**-24**	451	475	**24**
Hungary	476	484	8	462	442	**-20**	450	469	**19**
Ireland	496	503	**7**	510	491	**-19**	471	488	**17**
Colombia	410	418	**7**	407	391	**-16**	374	388	**14**
Argentina	390	397	**7**	394	385	**-9**	358	376	**18**
El Salvador	382	388	**6**	375	358	**-17**	340	353	**13**
Canada*	508	512	**5**	501	479	**-22**	475	495	**20**
Lebanon	370	374	5	335	326	**-10**	374	381	7
Ecuador	391	396	**4**	394	376	**-18**	360	372	**12**
Türkiye	492	496	4	482	460	**-22**	453	471	**18**
Paraguay	353	357	4	361	343	**-18**	326	341	**15**
Dushanbe (Tajikistan)	332	336	4	372	364	**-8**	375	389	**15**
Italy	481	485	3	488	460	**-28**	459	476	**17**
Germany	484	487	3	478	453	**-25**	458	469	**11**
Austria	495	498	3	480	454	**-26**	466	489	**23**
Uruguay	443	446	2	436	411	**-25**	398	412	**13**
Brazil	408	409	2	419	397	**-21**	373	380	**7**
Luxembourg	473	474	1	458	429	**-30**	448	467	**19**
Denmark	477	478	1	476	445	**-31**	463	478	**14**
Macao (China)	540	541	1	513	490	**-22**	540	558	**19**
Australia	509	509	1	507	475	**-31**	469	486	**16**
Spain	477	477	0	464	439	**-26**	450	464	**14**
Singapore	560	560	0	548	522	**-26**	558	568	**10**
Brunei Darussalam	440	439	-1	438	414	**-25**	434	437	3
Viet Nam	458	457	-1	404	379	**-25**	440	446	**6**
Estonia	528	527	-1	512	487	**-25**	502	514	**13**
Malaysia	420	419	-1	403	382	**-22**	394	400	**6**
Poland	496	494	-1	500	463	**-37**	478	490	**13**
Romania	426	424	-2	429	399	**-30**	416	422	7
Belgium	491	489	-2	483	450	**-33**	472	487	**16**
Iceland	443	441	-2	439	408	**-31**	444	456	**12**
Korea	527	525	-2	515	487	**-28**	517	528	**11**
New Zealand*	510	508	-2	514	480	**-33**	474	486	**12**
Morocco	359	357	-3	329	313	**-17**	356	354	-2
Czechia	492	489	-3	484	454	**-31**	471	483	**12**
Portugal	484	480	-4	479	445	**-33**	455	465	**11**
Ukrainian regions (17 of 27)	450	446	-4	434	402	**-32**	427	435	**8**

	Science performance			Reading performance			Mathematics performance		
	Girls	Boys	Difference between boys and girls	Girls	Boys	Difference between boys and girls	Girls	Boys	Difference between boys and girls
	Mean score	Mean score	Score dif.	Mean score	Mean score	Score dif.	Mean score	Mean score	Score dif.
Slovak Republic	477	472	-5	466	429	**-37**	463	475	**11**
Netherlands*	488	483	-5	459	424	**-35**	479	488	**9**
Kazakhstan	422	417	**-5**	398	372	**-27**	409	418	**9**
Indonesia	391	386	**-5**	377	353	**-24**	367	361	**-6**
Switzerland	504	498	-5	485	454	**-31**	493	506	**13**
Mauritius	441	435	-5	415	395	**-20**	405	409	4
France	487	480	-6	473	441	**-32**	451	464	**13**
Dominican Republic	364	357	**-7**	360	330	**-30**	336	342	**6**
Thailand	437	427	**-9**	406	376	**-30**	409	404	**-6**
Uzbekistan	442	433	**-9**	m	m	m	m	m	m
Norway*	475	465	**-10**	473	434	**-39**	449	455	**6**
Lithuania	493	483	**-10**	486	442	**-44**	466	475	**9**
Chinese Taipei	545	535	**-11**	528	489	**-39**	546	547	1
Moldova	427	417	**-11**	423	385	**-38**	408	412	4
United Arab Emirates	464	453	**-11**	451	414	**-37**	451	455	**4**
Latvia	474	462	**-12**	450	409	**-42**	457	464	**7**
Greece	440	428	**-12**	446	400	**-46**	421	427	6
Montenegro	442	429	**-12**	440	399	**-41**	411	411	0
Sweden	491	479	**-12**	487	447	**-41**	463	465	2
Philippines	380	367	**-12**	380	354	**-27**	373	368	**-6**
Serbia	436	422	**-13**	435	395	**-40**	417	417	0
Kyrgyzstan	369	356	**-13**	358	331	**-27**	364	364	0
Israel	449	435	**-13**	455	417	**-38**	432	435	3
Azerbaijan	416	402	**-14**	392	356	**-36**	423	422	-1
Cambodia	388	374	**-14**	355	338	**-17**	365	367	2
Qatar	441	427	**-14**	438	398	**-40**	415	417	2
Georgia	430	415	**-15**	406	364	**-42**	417	416	-1
Saudi Arabia	422	405	**-17**	400	374	**-26**	386	394	7
Albania*	443	426	**-17**	423	391	**-32**	431	435	4
Armenia	377	359	**-18**	368	327	**-40**	377	375	-2
Malta	462	443	**-19**	438	392	**-47**	443	435	**-8**
Kosovo	366	347	**-19**	358	322	**-35**	351	350	-1
Croatia	486	466	**-20**	477	430	**-47**	455	456	1
North Macedonia	389	369	**-20**	373	342	**-31**	381	378	-3
Jordan	417	397	**-20**	379	346	**-33**	390	385	-5
Slovenia	494	473	**-21**	471	420	**-52**	461	458	-3
Cyprus	422	400	**-21**	401	357	**-44**	413	410	-3
Finland	516	493	**-22**	498	452	**-46**	468	470	2
Mongolia	436	412	**-23**	390	358	**-31**	423	414	**-8**
Bulgaria	434	409	**-26**	412	364	**-49**	413	398	**-15**
Kurdistan Region (Iraq)	365	339	**-26**	328	295	**-33**	339	338	-1
Palestinian Authority	375	338	**-37**	374	319	**-56**	366	339	**-27**

* Caution is required when interpreting estimates because one or more PISA sampling standards were not met. For Albania, particular caution is required when interpreting questionnaire results due to a coverage issue (see Reader's Guide).
Notes: Values that are statistically significant are indicated in bold (see Annex A3).
Countries/economies with a mean performance **above** the OECD average.
Countries/economies with a mean performance **not statistically different** from the OECD average.
Countries/economies with a mean performance **below** the OECD average.
Countries and economies are ranked in descending order of the gender gap in science performance.
Source: OECD, PISA 2025 Database, Tables I.B1.2c.1, I.B1.2c.2 and I.B1.2c.3.

Table I.4. Snapshot of perceived engagement with learning and response behaviour

	Drive to learn		Agency and adaptability					Hasty responses (percentage of responses that are both incorrect and fast – average across reading items)
	Students' perseverance	Students' curiosity	Students' goal setting	Students' help seeking	Students' beliefs about the nature of science	Students' cognitive adaptability	Students' growth mindset	
	Mean index	Mean index	Mean index	Mean index	Mean index	Mean index	%	%
OECD average	0.00	0.00	0.00	0.00	0.00	0.01	69.3	8.9
Costa Rica	0.51	0.31	0.19	0.36	-0.10	0.27	58.7	9.6
Thailand	0.40	0.00	0.28	0.16	-0.04	-0.15	36.3	10.8
Malaysia	0.38	0.21	0.25	0.43	-0.16	-0.20	37.0	7.2
Iceland	0.37	0.08	0.14	0.18	-0.08	0.06	61.9	11.4
Chile	0.34	0.24	0.10	0.11	-0.08	0.11	66.4	10.3
Mexico	0.33	0.24	0.04	0.22	-0.17	0.24	60.8	5.6
Colombia	0.32	0.24	0.12	0.22	-0.26	0.25	56.6	9.8
Ecuador	0.28	0.20	0.16	0.24	-0.25	0.16	49.4	7.9
United Arab Emirates	0.28	0.18	0.56	0.31	0.06	0.16	67.5	12.8
Philippines	0.27	0.14	0.30	0.17	-0.28	-0.08	44.2	7.6
Spain	0.26	0.12	0.22	0.09	0.05	0.15	m	9.7
Portugal	0.24	0.12	0.16	0.13	0.14	-0.07	66.9	7.8
Viet Nam	0.24	0.08	0.37	0.28	-0.27	0.12	51.8	8.8
Guatemala	0.23	0.19	0.11	0.20	-0.44	0.06	47.2	10.4
Peru	0.21	0.22	0.20	-0.02	-0.22	-0.05	45.2	8.6
Kurdistan Region (Iraq)	0.20	-0.08	m	m	-0.47	m	46.2	m
Uzbekistan	0.19	0.21	0.47	0.13	-0.23	0.15	53.1	12.2
Saudi Arabia	0.18	0.07	0.54	0.35	-0.04	0.30	64.4	11.9
Mauritius	0.18	0.32	m	m	-0.16	m	57.6	m
Romania	0.17	0.12	0.21	0.01	-0.07	-0.03	60.7	12.9
Uruguay	0.17	0.00	-0.05	0.12	-0.21	-0.04	74.3	11.7
Canada*	0.12	0.13	0.17	0.11	0.11	0.10	76.3	6.8
Türkiye	0.11	0.10	0.03	0.00	0.06	0.09	71.5	5.1
Malta	0.10	0.09	0.26	-0.02	-0.05	0.07	65.6	18.4
B-S-J-Z (China)	0.10	0.01	0.09	0.31	0.38	0.06	49.6	2.2
Singapore	0.08	0.15	0.20	0.38	0.31	0.00	62.3	5.6
Kosovo	0.08	-0.04	0.49	0.09	-0.47	-0.01	57.3	20.1
North Macedonia	0.07	-0.05	0.38	-0.06	-0.37	0.10	55.3	20.7
El Salvador	0.06	-0.10	0.04	0.16	-0.47	0.23	49.3	11.8
Japan	0.05	-0.21	-0.44	0.07	0.26	-0.54	76.0	5.5
Azerbaijan	0.05	-0.16	0.40	0.06	-0.36	0.12	55.8	17.0
Brunei Darussalam	0.03	0.25	0.13	0.33	0.02	-0.32	53.6	4.7
Austria	0.03	0.14	0.10	-0.06	0.03	0.08	78.6	8.1
Morocco	0.03	-0.26	0.37	0.18	-0.33	0.09	58.6	14.3
Switzerland	0.02	0.07	0.08	0.06	0.06	0.05	68.7	8.0
Ireland	0.02	0.14	-0.06	-0.08	0.21	0.04	76.3	4.1
Chinese Taipei	0.02	-0.13	-0.11	0.20	0.36	-0.25	45.5	8.4
Qatar	0.01	0.00	0.41	0.18	-0.12	0.00	65.0	16.4
Australia	0.00	0.08	0.02	0.07	0.13	0.07	67.5	8.0
France	-0.01	0.11	-0.20	-0.16	0.12	0.00	80.5	9.0
Lebanon	-0.01	-0.15	0.37	-0.20	-0.45	-0.15	58.2	22.5
Italy	-0.02	-0.01	0.06	0.00	-0.01	-0.22	69.8	8.6
Paraguay	-0.02	-0.06	0.13	0.17	-0.51	0.23	49.9	14.2
Korea	-0.02	0.01	-0.14	0.20	0.21	-0.20	77.9	6.9
Dushanbe (Tajikistan)	-0.02	-0.25	m	m	-0.50	m	52.0	m
Argentina	-0.03	-0.13	0.14	0.13	-0.37	0.00	58.7	13.0
New Zealand*	-0.03	0.06	-0.11	0.08	0.10	-0.03	74.4	7.1
Israel	-0.03	-0.08	0.09	0.08	-0.21	0.17	65.6	19.7
Moldova	-0.04	-0.11	0.20	0.03	-0.17	0.02	58.9	10.1
Armenia	-0.05	-0.16	0.38	-0.11	-0.53	0.17	63.2	23.1
United Kingdom	-0.05	0.03	0.10	-0.05	0.05	-0.03	73.6	6.4
Croatia	-0.06	-0.10	0.20	-0.08	0.03	0.07	71.6	11.4
Mongolia	-0.06	0.22	0.19	0.16	0.01	0.01	72.1	10.1
Estonia	-0.06	-0.01	-0.03	0.08	0.13	0.12	83.0	4.4
Hungary	-0.07	-0.09	0.10	-0.06	-0.06	-0.21	68.0	8.7

	Drive to learn		Agency and adaptability					Hasty responses (percentage of responses that are both incorrect and fast – average across reading items)
	Students' perseverance	Students' curiosity	Students' goal setting	Students' help seeking	Students' beliefs about the nature of science	Students' cognitive adaptability	Students' growth mindset	
	Mean index	Mean index	Mean index	Mean index	Mean index	Mean index	%	%
Belgium	-0.07	-0.13	-0.08	-0.11	0.02	-0.03	66.7	7.2
Germany	-0.07	0.02	-0.07	-0.09	0.04	0.09	76.0	7.7
Norway*	-0.07	m	-0.03	0.00	0.04	m	57.1	12.2
Dominican Republic	-0.07	-0.09	0.09	0.10	-0.58	0.04	56.0	16.7
Greece	-0.08	-0.07	0.02	-0.10	-0.04	-0.04	74.2	14.3
Denmark	-0.09	-0.18	-0.21	0.00	-0.08	0.00	67.9	8.5
Jordan	-0.09	-0.32	0.20	0.03	-0.40	-0.03	56.2	10.5
Finland	-0.10	-0.06	-0.09	0.02	-0.06	-0.02	76.6	8.8
Macao (China)	-0.11	-0.11	-0.14	0.22	0.19	-0.21	44.6	4.1
Palestinian Authority	-0.11	-0.34	0.25	0.09	-0.48	0.03	56.4	17.9
Rwanda	-0.13	-0.27	m	m	-0.57	m	49.9	m
Hong Kong (China)	-0.13	-0.06	0.02	0.16	0.17	-0.19	44.0	8.8
Lithuania	-0.14	-0.18	0.08	-0.05	-0.09	-0.01	51.7	7.0
Luxembourg	-0.14	-0.03	-0.01	-0.20	0.02	-0.01	75.0	9.9
Montenegro	-0.14	-0.20	0.20	0.02	-0.34	0.23	67.3	12.2
Latvia	-0.16	-0.13	0.12	-0.09	-0.15	-0.05	75.6	11.4
Serbia	-0.16	-0.21	0.19	-0.04	-0.23	0.13	65.7	17.2
Cyprus	-0.20	-0.27	0.15	-0.14	-0.31	-0.07	64.2	24.9
Ukrainian regions (17 of 27)	-0.21	-0.32	0.09	-0.12	-0.09	0.19	68.2	9.6
Netherlands*	-0.21	-0.26	-0.12	-0.13	-0.30	-0.08	62.2	14.2
Kyrgyzstan	-0.22	-0.07	0.19	-0.03	-0.41	-0.02	72.6	15.1
Georgia	-0.22	-0.12	0.31	-0.13	-0.33	0.11	72.2	15.3
Bulgaria	-0.26	-0.28	0.06	-0.16	-0.41	0.12	56.4	22.3
Slovak Republic	-0.29	-0.10	0.03	-0.26	-0.12	-0.17	62.4	9.7
Czechia	-0.30	-0.28	-0.35	-0.27	0.00	-0.17	64.0	9.2
Slovenia	-0.31	-0.26	0.05	-0.23	-0.04	0.06	69.5	11.5
Poland	-0.34	-0.12	-0.17	-0.33	-0.09	0.03	69.9	8.4
Albania*	m	0.45	0.74	0.43	0.13	0.28	59.3	10.4
Indonesia	m	0.18	0.32	0.25	-0.21	-0.07	30.2	6.6
Zambia	m	0.14	m	m	-0.19	m	59.1	m
Kenya	m	-0.01	0.59	0.16	-0.36	0.03	45.1	10.1
Brazil	m	-0.05	0.07	0.05	-0.09	-0.15	52.3	12.3
Kazakhstan	m	-0.09	0.39	0.05	-0.33	0.21	74.8	9.0
Sweden	m	m	0.16	0.14	0.00	m	53.5	11.1
United States*	m	m	0.04	0.15	0.21	0.16	81.1	7.3
Cambodia	m	m	m	m	m	m	48.4	m

* Caution is required when interpreting estimates because one or more PISA sampling standards were not met. For Albania and the United States, particular caution is required when interpreting questionnaire results due to a coverage issue (see Reader's Guide).

Countries/economies with a strength of socio-economic gradient **below** the OECD average.
Countries/economies with a share of resilient students/mean performance **above** the OECD average.

Countries/economies with a strength of socio-economic gradient/share of resilient students/mean performance **not significantly different** from the OECD average.

Countries/economies with a strength of socio-economic gradient **above** the OECD average.
Countries/economies with a share of resilient students/mean performance **below** the OECD average.

Countries and economies are ranked in descending order of the mean index of students' perseverance.

Source: OECD, PISA 2025 Database, Tables I.A1.12, I.B1.3.1, I.B1.3.9, I.B1.3.16, I.B1.3.30, I.B1.3.40, I.B1.3.44 and I.B1.3.49.

Table I.5. Snapshot of safe and fair learning environment

	School climate			Beliefs about school and learning		
	Disciplinary climate	Absence of bullying	Lack of truancy	Sense of belonging at school	Value of learning at school[1]	Students' views on social mobility
	Mean index	%	%	Mean index	%	%
OECD average	0.14	52.5	66.1	0.09	51.4	66.4
Korea	1.32	73.1	96.6	0.31	84.9	69.5
Japan	1.12	68.5	92.9	0.42	75.9	55.9
Uzbekistan	0.82	75.5	55.1	0.24	65.4	54.4
B-S-J-Z (China)	0.80	62.4	96.2	-0.04	50.4	51.4
Kazakhstan	0.80	77.5	63.9	0.13	70.6	66.0
Saudi Arabia	0.77	69.3	30.4	0.43	71.4	65.3
Albania*	0.70	73.9	60.8	0.67	58.3	58.3
Armenia	0.66	80.1	27.9	0.19	76.2	70.3
Chinese Taipei	0.59	71.0	89.4	0.01	69.7	52.4
Kenya	0.57	21.6	50.0	-0.21	47.2	39.6
Ukrainian regions (17 of 27)	0.50	65.1	27.3	0.06	65.7	69.2
Hong Kong (China)	0.48	53.6	86.3	-0.32	51.0	41.6
Indonesia	0.47	51.5	78.0	-0.07	70.3	32.0
Malaysia	0.46	41.7	78.6	-0.19	71.1	40.8
Azerbaijan	0.45	70.2	44.6	0.23	64.5	59.4
Croatia	0.41	61.9	79.4	0.46	55.9	69.4
Macao (China)	0.40	44.1	85.8	-0.27	47.3	41.1
Montenegro	0.37	67.3	42.7	0.35	52.2	62.1
Thailand	0.36	58.2	76.6	-0.26	44.6	37.9
Romania	0.36	48.8	51.9	0.14	48.3	73.5
Serbia	0.35	70.8	64.4	0.33	41.6	69.3
Kyrgyzstan	0.32	55.8	42.1	0.05	56.0	65.8
Austria	0.32	47.7	73.2	0.50	41.0	69.3
Viet Nam	0.30	54.2	90.1	-0.28	74.3	52.3
Slovak Republic	0.29	56.5	85.6	-0.04	57.7	63.6
Lithuania	0.29	54.7	63.7	-0.11	42.0	61.8
Brunei Darussalam	0.28	31.9	62.2	-0.43	33.6	42.3
United States*	0.27	52.9	56.5	-0.21	53.0	70.0
Georgia	0.24	67.8	19.6	0.08	67.6	71.8
Latvia	0.24	44.0	65.2	-0.11	52.9	71.6
Estonia	0.23	39.5	62.5	-0.04	53.7	72.3
United Arab Emirates	0.22	51.3	59.0	-0.01	47.5	65.0
North Macedonia	0.20	63.8	48.8	0.26	50.2	57.5
Switzerland	0.19	46.9	79.1	0.38	44.4	64.7
Hungary	0.19	55.9	83.1	0.23	55.3	72.1
Singapore	0.19	47.7	85.2	-0.11	62.6	m
Peru	0.19	43.1	53.7	-0.19	62.9	52.4
Ireland	0.18	52.3	47.8	-0.11	48.3	67.8
Moldova	0.18	38.4	58.1	0.00	52.6	68.0
Poland	0.16	55.9	49.0	-0.18	36.9	71.6
Mongolia	0.16	52.2	66.0	0.19	57.7	60.3
Portugal	0.15	62.1	85.3	0.16	50.8	76.7
Costa Rica	0.14	47.3	32.4	0.21	53.4	58.2
Finland	0.14	56.6	75.8	0.17	64.7	67.0
Iceland	0.13	59.7	76.0	0.36	57.7	55.4
Türkiye	0.12	52.1	37.2	0.05	50.0	62.5
Czechia	0.10	50.2	87.7	-0.19	46.8	69.9
Luxembourg	0.10	47.8	76.4	0.09	39.2	65.9
Ecuador	0.09	43.8	61.5	-0.01	50.8	53.1

	School climate			Beliefs about school and learning		
	Disciplinary climate	Absence of bullying	Lack of truancy	Sense of belonging at school	Value of learning at school[1]	Students' views on social mobility
	Mean index	%	%	Mean index	%	%
Canada*	0.09	50.0	54.1	-0.11	53.4	66.6
El Salvador	0.09	35.4	55.8	-0.08	62.3	56.2
Norway*	0.08	54.6	72.2	0.39	47.4	m
Guatemala	0.07	50.5	46.0	m	52.0	47.8
Mexico	0.07	52.6	71.1	0.05	66.1	60.5
Sweden	0.06	56.2	77.0	0.30	m	m
Slovenia	0.06	58.1	66.2	0.17	58.0	71.4
United Kingdom	0.05	43.9	66.1	-0.10	50.7	64.9
Spain	0.05	59.9	51.3	0.46	54.7	m
Germany	0.04	38.2	78.0	0.24	24.6	m
Philippines	0.04	25.2	76.6	-0.29	32.6	36.9
Qatar	0.03	47.9	35.8	-0.14	53.0	62.4
Colombia	0.03	43.9	63.7	0.05	62.3	57.2
Belgium	0.03	46.9	80.3	0.12	47.3	70.9
Denmark	0.03	41.0	58.7	0.14	53.0	62.1
Jordan	0.02	51.0	64.2	-0.05	60.6	55.9
Kosovo	0.02	54.9	28.4	0.14	53.2	54.0
Netherlands*	0.00	60.5	74.8	0.23	47.9	63.3
Israel	-0.04	62.2	44.8	0.18	42.9	74.8
Italy	-0.04	65.3	27.3	0.01	41.8	73.1
Dominican Republic	-0.06	44.8	35.7	-0.02	63.5	59.0
Malta	-0.08	44.5	49.1	-0.14	45.6	61.6
Australia	-0.09	45.1	49.4	-0.16	55.3	m
France	-0.12	56.0	67.9	0.06	45.0	70.4
New Zealand*	-0.13	39.4	59.5	-0.23	51.9	61.3
Brazil	-0.15	51.8	30.7	-0.05	44.8	57.5
Chile	-0.16	46.1	81.5	-0.04	56.2	61.2
Bulgaria	-0.19	52.4	42.5	-0.01	60.8	56.1
Palestinian Authority	-0.20	53.8	40.5	-0.12	63.4	62.5
Morocco	-0.20	48.3	31.9	-0.08	59.9	59.6
Cyprus	-0.21	53.9	63.5	-0.02	43.5	63.7
Uruguay	-0.21	52.8	74.6	0.28	55.8	64.2
Paraguay	-0.22	42.0	25.9	-0.15	62.0	52.6
Lebanon	-0.22	40.9	48.9	m	47.4	54.8
Greece	-0.32	52.3	42.8	-0.04	35.4	67.9
Argentina	-0.43	45.1	71.8	-0.04	52.0	52.7
Zambia	m	30.2	57.8	m	60.5	54.6
Cambodia	m	49.0	79.5	m	40.2	47.8
Dushanbe (Tajikistan)	m	68.8	52.4	-0.11	49.7	47.9
Rwanda	m	16.2	46.0	m	48.8	44.6
Kurdistan Region (Iraq)	m	64.4	50.3	m	62.2	48.5
Mauritius	m	38.6	52.9	-0.23	39.2	54.7

* Caution is required when interpreting estimates because one or more PISA sampling standards were not met. For Albania and the United States, particular caution is required when interpreting questionnaire results due to a coverage issue (see Reader's Guide).
1. The value of learning at school is measured by the percentage of students who disagree or strongly disagree that "School has done little to prepare me for adult life when I leave school".
Countries/economies with a mean index/percentage **above** the OECD average.
Countries/economies with a mean index/percentage **not statistically different** from the OECD average.
Countries/economies with a mean index/percentage **below** the OECD average.
Countries and economies are ranked in descending order of the mean index of disciplinary climate.
Source: OECD, PISA 2025 Database, Tables I.B1.1.3, I.B1.3.62, I.B1.3.70, I.B1.4.132, I.B1.4.138 and I.B1.4.158.

Table I.6. Snapshot of digitalisation and Artificial Intelligence (AI)

	Digital learning opportunities			Digital learning conditions		
	Schools' capacity to enhance teaching and learning using digital devices	Students using AI at least weekly to help them learn	Students learning to assess AI-generated information in their school lesson	Students reporting no distraction using digital devices	Students in schools where cell phones are not allowed	Students in schools with subject-specific guidelines on digital devices
	Mean index	%	%	%	%	%
OECD average	-0.03	45.5	62.6	39.2	49.5	71.2
United Arab Emirates	0.98	64.3	81.7	51.9	90.1	96.3
Uzbekistan	0.93	48.6	80.6	61.1	69.2	87.2
Singapore	0.91	65.6	81.0	25.8	43.1	94.1
Switzerland	0.73	55.4	69.0	43.4	50.6	79.4
Denmark	0.70	48.1	69.1	26.8	64.8	70.3
Thailand	0.65	50.7	68.9	32.6	8.0	59.1
Sweden	0.62	47.6	64.9	29.8	57.5	73.8
United States*	0.53	37.3	56.3	34.1	31.3	89.3
B-S-J-Z (China)	0.51	40.7	44.6	70.1	82.8	87.8
Netherlands*	0.51	35.2	55.4	43.2	58.5	75.8
Luxembourg	0.49	46.7	65.8	46.0	35.3	86.6
Iceland	0.49	41.5	72.8	33.7	51.4	79.0
Norway*	0.46	53.7	74.3	28.9	87.5	73.5
Austria	0.42	49.8	62.8	44.9	27.1	77.9
Qatar	0.41	46.0	68.6	62.0	88.6	95.3
Australia	0.39	50.3	68.3	22.9	85.3	89.2
Korea	0.35	50.7	66.5	72.2	34.1	60.1
Chinese Taipei	0.34	40.5	65.9	53.0	43.3	80.0
Kazakhstan	0.27	47.0	80.2	52.1	39.2	84.9
Finland	0.25	30.1	61.0	34.4	5.2	55.2
Viet Nam	0.24	68.6	70.0	44.6	24.3	77.4
New Zealand*	0.20	46.7	64.6	24.7	88.9	84.4
Bulgaria	0.17	41.2	71.3	31.9	39.2	73.0
Hong Kong (China)	0.16	53.2	69.3	41.8	85.1	74.2
Lithuania	0.15	52.5	73.9	37.7	11.3	58.7
Slovenia	0.11	48.3	63.7	50.1	45.8	67.2
Croatia	0.10	48.1	69.2	49.8	26.2	47.7
Belgium	0.06	42.5	58.6	48.0	52.0	77.1
Canada*	0.03	37.7	56.2	31.4	36.7	86.5
Macao (China)	0.00	66.8	74.5	49.9	49.2	87.5
Italy	0.00	47.5	73.7	28.4	63.2	59.1
Philippines	0.00	54.7	70.8	24.9	20.5	84.7
Indonesia	-0.03	53.5	73.2	49.0	45.4	86.5
Romania	-0.06	39.9	72.6	37.9	49.3	72.8
Germany	-0.07	50.2	59.3	37.5	64.3	80.2
Estonia	-0.07	58.4	72.5	26.6	26.0	30.4
Hungary	-0.09	36.9	61.0	69.7	89.8	55.5
Cambodia	-0.11	m	m	m	48.6	69.8
Czechia	-0.11	46.5	70.0	38.5	28.0	66.4
Latvia	-0.11	50.6	79.1	31.1	22.9	72.0
Cyprus	-0.11	42.5	67.6	37.4	83.4	80.3
Mongolia	-0.13	57.2	74.3	23.8	48.5	68.5
El Salvador	-0.14	40.1	60.5	54.6	71.2	75.8
Saudi Arabia	-0.17	53.8	74.8	78.5	84.1	93.3
Türkiye	-0.18	52.4	68.1	62.5	82.9	94.2
United Kingdom	-0.19	31.5	42.4	48.1	80.3	78.0
Poland	-0.21	55.1	62.4	25.6	18.2	49.9
Dushanbe (Tajikistan)	-0.21	m	m	m	85.2	69.2
Ukrainian regions (17 of 27)	-0.21	54.2	77.7	30.7	9.8	70.1
Georgia	-0.22	42.0	69.3	36.8	23.3	39.6
Slovak Republic	-0.23	46.1	71.1	57.3	56.7	39.2
Malta	-0.23	55.5	61.9	69.7	87.7	61.6
France	-0.25	37.4	46.8	44.8	27.1	78.9
Montenegro	-0.26	43.1	57.9	46.1	94.5	30.5

	Digital learning opportunities			Digital learning conditions		
	Schools' capacity to enhance teaching and learning using digital devices	Students using AI at least weekly to help them learn	Students learning to assess AI-generated information in their school lesson	Students reporting no distraction using digital devices	Students in schools where cell phones are not allowed	Students in schools with subject-specific guidelines on digital devices
	Mean index	%	%	%	%	%
Moldova	-0.27	47.8	74.2	38.3	51.4	67.3
Israel	-0.28	49.3	63.0	35.2	30.0	84.5
Spain	-0.30	54.2	59.5	37.2	86.3	90.7
North Macedonia	-0.38	43.8	75.5	36.2	59.9	76.7
Serbia	-0.39	51.8	61.6	46.0	47.7	55.3
Jordan	-0.40	41.0	59.2	63.0	82.8	90.3
Ireland	-0.40	25.9	47.2	53.4	77.6	85.7
Kyrgyzstan	-0.42	50.4	74.8	41.0	51.3	82.8
Albania*	-0.45	45.5	81.6	65.1	95.9	85.7
Portugal	-0.50	48.3	57.4	31.2	24.7	73.2
Kosovo	-0.50	46.0	76.7	38.0	73.2	74.5
Brunei Darussalam	-0.51	59.3	73.4	64.8	90.3	86.8
Azerbaijan	-0.51	48.2	76.1	60.7	64.6	75.6
Japan	-0.56	27.4	31.2	74.1	33.8	63.4
Greece	-0.59	33.7	60.7	38.7	98.3	69.3
Chile	-0.61	51.1	61.5	20.1	58.5	59.3
Armenia	-0.63	49.1	75.9	50.4	34.1	47.3
Morocco	-0.65	44.9	52.7	39.6	81.8	63.8
Mauritius	-0.65	m	m	m	79.4	66.8
Guatemala	-0.67	49.9	52.6	43.5	50.1	73.9
Malaysia	-0.69	56.3	70.8	62.3	84.0	88.1
Peru	-0.71	53.8	55.3	43.7	86.4	66.9
Lebanon	-0.72	47.5	73.7	51.6	85.1	62.7
Rwanda	-0.74	m	m	m	66.7	76.3
Uruguay	-0.74	53.0	65.3	14.0	14.1	32.4
Mexico	-0.76	47.4	59.2	24.2	27.2	67.5
Dominican Republic	-0.79	50.4	64.7	43.1	77.1	74.4
Kurdistan Region (Iraq)	-0.82	m	m	m	81.3	62.1
Palestinian Authority	-0.83	44.6	61.4	60.8	73.6	86.3
Brazil	-0.86	47.8	51.2	50.6	81.4	81.8
Colombia	-0.97	55.7	63.5	25.9	37.5	54.7
Ecuador	-0.99	51.9	61.2	41.4	85.7	55.6
Zambia	-1.05	m	m	m	83.2	68.4
Paraguay	-1.06	45.0	53.7	35.1	42.6	68.9
Costa Rica	-1.09	50.1	66.1	28.5	22.7	69.2
Argentina	-1.11	51.8	60.7	18.4	37.0	82.0
Kenya	-1.16	45.7	55.5	65.6	59.8	74.3

* Caution is required when interpreting estimates because one or more PISA sampling standards were not met. For Albania and the United States, particular caution is required when interpreting questionnaire results due to a coverage issue (see Reader's Guide).

Countries/economies with values **above** the OECD average.

Countries/economies with values **not significantly different** from the OECD average.

Countries/economies with values **below** the OECD average.

Countries and economies are ranked in descending order of the mean index of schools' capacity to enhance teaching and learning using digital devices.

Source: OECD, PISA 2025 Database, Tables I.B1.4.14, I.B1.4.47, I.B1.4.53, I.B1.4.68 and I.B1.4.132.

Table I.7. Snapshot of supportive families and schools

	Support perceived by students		School conditions for support		
	Family support	Teacher support	Students in schools with no teacher shortages	Students in schools where peer-to-peer tutoring is provided	Students in schools with no material shortages
	Mean index	Mean index	%	%	%
OECD average	-0.19	0.03	28.8	51.2	43.8
Albania*	0.42	0.97	76.5	70.7	45.4
Romania	0.16	0.08	63.6	60.9	44.9
Estonia	0.11	0.01	8.5	49.0	22.0
Armenia	0.10	0.59	52.1	71.4	30.2
Sweden	0.08	0.09	48.9	21.9	62.7
Hungary	0.03	-0.04	42.0	53.3	35.9
Colombia	0.01	0.54	30.6	46.5	17.6
United Arab Emirates	-0.01	0.38	58.2	81.7	68.9
Kenya	-0.03	0.39	23.7	93.7	23.9
Iceland	-0.03	0.31	48.3	43.1	45.8
Poland	-0.04	-0.56	26.5	80.2	42.8
Montenegro	-0.04	0.18	42.8	65.7	16.1
Saudi Arabia	-0.04	0.82	58.1	95.9	48.4
Croatia	-0.04	0.08	26.2	60.6	32.6
Greece	-0.04	-0.30	22.9	47.5	30.7
Slovak Republic	-0.05	0.09	40.6	52.8	19.1
Finland	-0.05	0.22	56.6	29.5	55.7
Portugal	-0.05	0.32	12.9	62.6	27.0
Korea	-0.06	0.51	16.1	80.3	22.4
Viet Nam	-0.07	0.61	26.3	96.2	40.6
Uzbekistan	-0.08	0.73	66.5	98.4	47.5
Spain	-0.08	0.05	20.1	47.0	43.9
Dushanbe (Tajikistan)	-0.08	m	50.3	92.7	37.4
Azerbaijan	-0.08	0.82	50.4	82.5	33.1
Lithuania	-0.09	-0.24	23.1	77.0	15.2
United Kingdom	-0.09	0.23	23.2	54.2	40.3
Kosovo	-0.09	0.37	45.4	81.8	20.0
Latvia	-0.10	0.00	14.1	71.7	13.2
B-S-J-Z (China)	-0.10	0.62	30.5	91.5	49.3
Moldova	-0.11	0.28	37.9	81.8	31.8
Serbia	-0.11	0.10	52.6	71.4	38.0
North Macedonia	-0.11	0.38	54.7	48.0	19.0
Ireland	-0.12	0.19	11.4	26.2	61.8
Ukrainian regions (17 of 27)	-0.13	0.19	36.3	59.8	16.9
Kyrgyzstan	-0.16	0.33	27.9	61.0	7.4
Malta	-0.17	0.26	26.4	17.3	60.8
United States*	-0.18	0.26	49.1	71.4	66.2
Australia	-0.19	0.24	24.3	40.8	65.9
Denmark	-0.20	-0.07	61.4	11.7	63.3
Czechia	-0.20	-0.51	33.1	25.6	46.2
Georgia	-0.21	0.35	82.7	69.4	41.7
Zambia	-0.21	m	21.7	87.2	11.7
New Zealand*	-0.22	0.15	29.3	72.9	57.1
Netherlands*	-0.22	-0.31	12.2	38.8	71.2
Austria	-0.22	-0.25	43.1	57.6	52.8
Italy	-0.22	-0.18	38.4	78.3	58.4
Peru	-0.23	0.47	46.4	60.7	24.5
Ecuador	-0.24	0.59	40.0	58.0	26.5
Switzerland	-0.25	-0.10	37.1	34.3	76.4

	Support perceived by students		School conditions for support		
	Family support	Teacher support	Students in schools with no teacher shortages	Students in schools where peer-to-peer tutoring is provided	Students in schools with no material shortages
	Mean index	Mean index	%	%	%
Kurdistan Region (Iraq)	-0.25	m	35.5	89.6	13.4
Norway*	-0.27	-0.03	27.2	29.5	31.4
Chinese Taipei	-0.27	0.33	24.0	71.0	60.3
Germany	-0.27	-0.28	18.1	40.4	45.7
Chile	-0.29	0.45	40.3	44.1	51.6
Bulgaria	-0.29	0.14	71.6	67.6	75.7
Canada*	-0.30	m	32.7	72.0	50.0
Mexico	-0.31	0.43	36.7	72.6	29.5
Cyprus	-0.32	-0.11	51.5	26.2	52.2
Qatar	-0.33	0.38	64.1	83.3	80.2
Kazakhstan	-0.34	0.65	53.4	86.9	56.4
Argentina	-0.34	0.30	28.6	78.8	24.8
Uruguay	-0.34	0.23	36.2	39.8	38.2
Guatemala	-0.36	0.63	46.3	61.1	30.5
Mongolia	-0.37	0.21	35.6	84.9	33.6
Mauritius	-0.37	m	25.1	56.9	47.4
Belgium	-0.38	-0.05	9.6	30.1	58.6
Luxembourg	-0.38	-0.26	15.9	63.4	81.4
Israel	-0.38	-0.07	23.6	64.2	42.3
Türkiye	-0.39	0.16	58.4	64.1	48.5
Thailand	-0.40	0.74	46.6	97.8	36.8
Morocco	-0.40	0.30	33.4	47.2	12.4
Slovenia	-0.41	-0.41	17.5	61.2	44.5
Lebanon	-0.42	0.17	55.8	45.6	40.5
Philippines	-0.42	0.62	59.0	96.2	23.2
France	-0.42	-0.18	12.9	52.9	48.5
Paraguay	-0.45	0.57	48.7	54.2	35.4
Palestinian Authority	-0.45	0.45	34.9	51.1	32.7
Jordan	-0.46	0.66	38.4	72.4	37.3
Dominican Republic	-0.46	0.68	42.1	58.2	29.2
Brazil	-0.47	0.35	49.6	57.9	51.6
El Salvador	-0.50	0.65	56.2	73.8	45.1
Malaysia	-0.51	0.52	30.9	94.5	59.5
Singapore	-0.51	0.43	13.7	72.1	92.2
Hong Kong (China)	-0.55	0.26	49.3	77.6	67.2
Rwanda	-0.56	m	34.4	86.5	18.4
Brunei Darussalam	-0.58	0.31	31.5	76.4	33.0
Indonesia	-0.60	0.54	49.4	87.4	28.0
Japan	-0.64	0.37	3.5	45.7	5.2
Cambodia	-0.66	m	10.9	80.0	15.7
Macao (China)	-0.68	0.13	44.8	89.2	40.5
Costa Rica	m	0.52	23.3	32.7	13.6

* Caution is required when interpreting estimates because one or more PISA sampling standards were not met. For Albania and the United States, particular caution is required when interpreting questionnaire results due to a coverage issue (see Reader's Guide).

Countries/economies with values **above** the OECD average.

Countries/economies with values **not significantly different** from the OECD average.

Countries/economies with values **below** the OECD average.

Countries and economies are ranked in descending order of the mean index of family support.

Source: OECD, PISA 2025 Database, Tables I.B1.4.71, I.B1.4.83, I.B1.4.101, I.B1.4.113 and I.B1.4.120.

Table I.8. Snapshot of students and the environment

	Performance in environmental science (science subscale)		Environmental attitudes			Environmental commitment		School opportunities for environmental learning and action
	All students	Difference between advantaged and disadvantaged students	Index of students' environmental awareness	Index of students' beliefs in their capacity to generate environmental change	Index of students' beliefs in collective environmental efficacy	Students who participate in at least one environment-related activity	Students who are interested, to some or a large extent, in contributing to protecting the environment in their future jobs	Opportunities for environmental learning in class
	Mean score	Score dif.	Mean index	Mean index	Mean index	%	%	Mean index
OECD average	480	**85**	-0.14	0.00	0.00	71.9	61.6	0.00
B-S-J-Z (China)	594	**68**	0.54	0.60	0.53	87.4	77.8	0.98
Singapore	561	**88**	0.37	0.35	0.57	71.5	61.7	0.21
Chinese Taipei	539	**92**	-0.01	0.30	0.34	71.8	49.6	0.57
Macao (China)	539	**41**	0.19	0.18	0.15	79.8	58.5	0.50
Japan	536	**67**	-0.42	0.03	0.36	58.9	62.2	-0.24
Korea	522	**69**	0.12	0.43	0.35	68.2	52.9	-0.09
Estonia	520	**64**	0.02	-0.08	-0.03	68.5	60.8	0.11
United Kingdom	513	**78**	0.35	-0.10	-0.06	59.8	53.2	-0.08
Canada*	511	**56**	0.08	0.07	0.16	68.2	59.7	0.10
New Zealand*	511	**92**	-0.09	-0.06	0.07	61.6	55.5	-0.04
Australia	510	**78**	0.05	-0.01	0.11	61.7	56.3	0.02
Ireland	503	**71**	0.22	0.06	0.32	66.9	62.0	0.20
Finland	502	**83**	-0.15	-0.10	-0.08	65.6	51.5	0.01
United States*	500	**100**	m	m	m	m	m	m
Hong Kong (China)	497	**68**	0.09	0.11	0.19	73.8	45.5	0.55
Switzerland	495	**97**	-0.16	-0.01	-0.13	75.6	56.3	-0.14
Türkiye	494	**82**	0.39	0.22	-0.16	86.1	78.5	0.05
Austria	493	**97**	-0.03	0.03	-0.15	75.2	52.1	-0.25
Poland	492	**83**	-0.27	-0.31	-0.25	65.2	58.9	-0.20
Czechia	488	**96**	-0.23	-0.24	-0.27	75.3	60.1	-0.11
Lithuania	487	**64**	0.07	0.10	0.17	80.1	51.2	0.14
France	486	**95**	-0.04	-0.07	0.12	73.9	58.5	-0.13
Belgium	486	**98**	-0.23	-0.17	-0.04	69.8	59.0	-0.30
Sweden	485	**93**	0.05	0.03	-0.09	64.8	m	0.11
Netherlands*	483	**99**	-0.39	-0.41	-0.32	54.8	41.0	-0.61
Italy	482	**83**	-0.09	-0.02	-0.06	74.4	71.9	0.04
Germany	481	**124**	-0.03	-0.04	-0.30	73.7	45.9	-0.25
Portugal	481	**88**	0.28	0.32	0.31	75.6	75.8	0.30
Slovenia	480	**72**	-0.14	-0.03	0.01	85.0	58.4	-0.02
Spain	477	**69**	-0.32	0.02	-0.04	70.8	66.7	-0.09
Hungary	475	**107**	-0.14	0.09	-0.13	84.3	66.6	0.12
Croatia	474	**83**	-0.05	0.16	0.18	75.5	56.0	0.01
Denmark	472	**74**	-0.13	-0.23	-0.07	74.7	53.9	0.13
Luxembourg	471	**131**	-0.18	-0.12	-0.08	77.1	59.8	-0.26
Norway*	469	**81**	-0.10	-0.11	-0.17	63.5	m	0.13
Slovak Republic	469	**115**	-0.30	-0.09	-0.19	74.8	68.5	0.07
Viet Nam	465	**88**	0.07	0.20	0.37	93.5	92.8	0.90
Latvia	464	**57**	-0.29	-0.09	-0.12	82.6	60.0	0.21
United Arab Emirates	458	**48**	0.20	0.38	0.44	83.8	74.8	0.38
Malta	453	**69**	0.30	0.18	0.16	71.5	63.0	0.24
Ukrainian regions (17 of 27)	447	**68**	-0.12	-0.04	0.04	79.4	70.9	0.17
Uruguay	445	**84**	-0.62	-0.10	-0.04	64.5	60.8	0.06
Israel	443	**79**	-0.69	-0.08	-0.18	65.6	60.0	-0.18
Brunei Darussalam	443	**85**	-0.13	0.06	0.26	85.9	71.7	0.48
Chile	442	**75**	-0.34	0.08	0.04	65.5	68.7	0.14
Montenegro	438	**63**	-0.44	0.02	-0.05	76.4	68.0	0.10
Uzbekistan	433	**23**	-0.12	0.35	0.41	90.1	77.9	0.82
Iceland	433	**66**	-0.51	0.13	0.06	73.2	71.1	0.14
Qatar	432	**44**	-0.21	0.08	0.13	74.7	71.2	0.03
Albania*	431	**59**	0.43	0.82	0.78	92.4	85.1	1.06
Costa Rica	430	m	-0.23	0.28	0.26	74.6	85.1	0.27

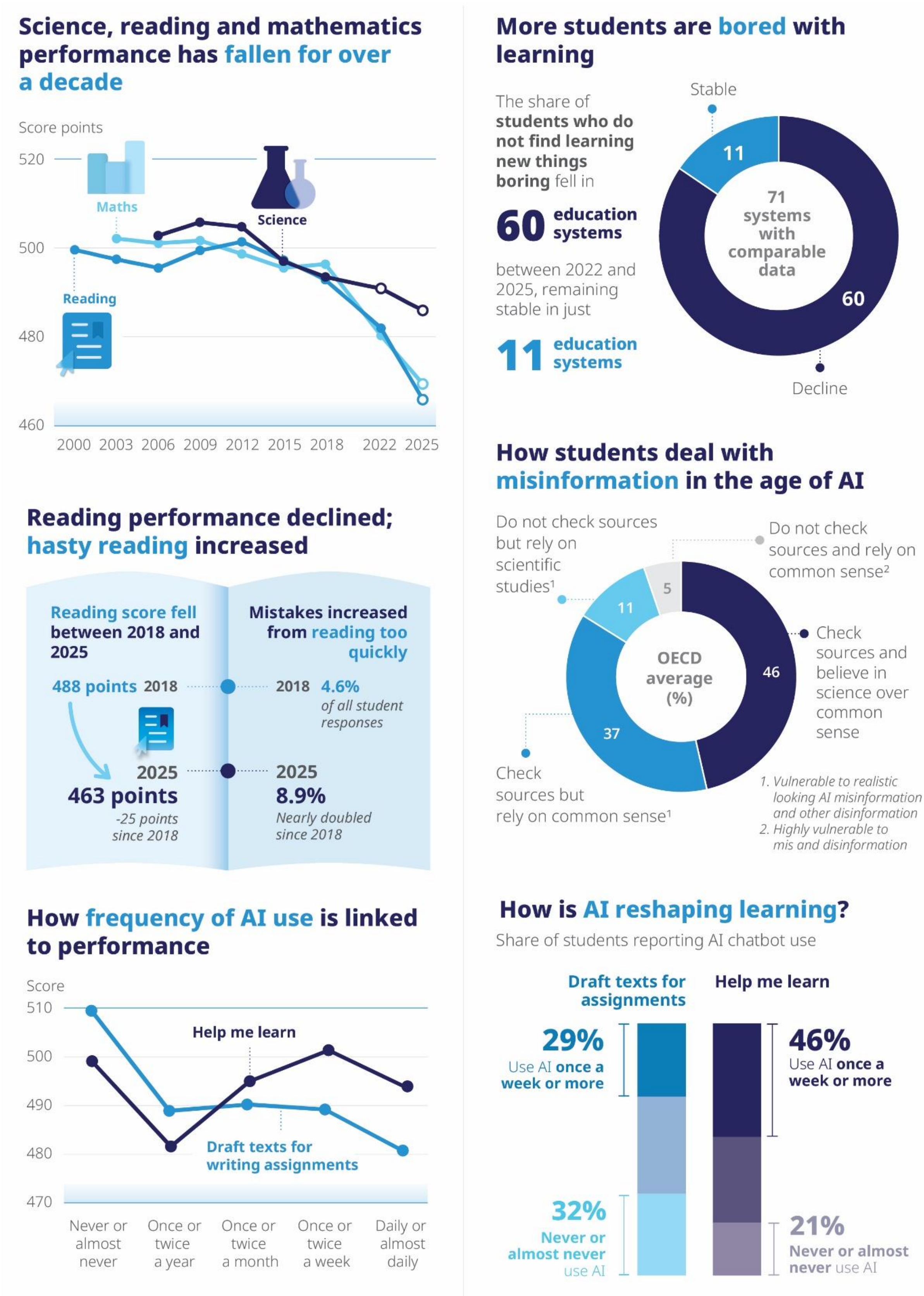
	Performance in environmental science (science subscale)		Environmental attitudes			Environmental commitment		School opportunities for environmental learning and action
	All students	Difference between advantaged and disadvantaged students	Index of students' environmental awareness	Index of students' beliefs in their capacity to generate environmental change	Index of students' beliefs in collective environmental efficacy	Students who participate in at least one environment-related activity	Students who are interested, to some or a large extent, in contributing to protecting the environment in their future jobs	Opportunities for environmental learning in class
	Mean score	Score dif.	Mean index	Mean index	Mean index	%	%	Mean index
Romania	426	**123**	-0.34	0.12	0.19	81.6	72.9	0.30
Thailand	425	**58**	-0.41	0.17	0.34	91.6	83.5	1.11
Serbia	425	**66**	-0.37	-0.02	-0.01	79.4	63.2	-0.01
Greece	425	**82**	-0.38	0.13	-0.05	83.0	48.4	-0.14
Moldova	423	**84**	-0.21	0.09	0.12	84.6	74.6	0.47
Mongolia	423	**64**	-0.14	0.25	0.29	88.1	74.7	0.12
Malaysia	421	**84**	-0.10	0.25	0.44	91.0	75.8	0.85
Kazakhstan	421	**40**	-0.02	0.06	0.03	75.0	70.3	0.51
Georgia	420	**49**	-0.04	0.06	0.02	86.3	65.8	0.35
Colombia	420	**93**	-0.43	0.10	0.19	77.4	80.2	0.33
Bulgaria	419	**100**	-0.30	-0.12	-0.11	77.1	59.4	0.05
Brazil	413	**96**	-0.26	0.11	0.04	77.6	67.3	0.17
Mexico	413	**74**	-0.45	0.17	0.33	83.9	85.2	0.44
Saudi Arabia	413	**43**	-0.53	0.40	0.46	78.6	79.0	0.53
Peru	405	**77**	-0.28	0.12	0.19	86.2	86.0	0.45
Azerbaijan	405	**62**	-0.23	0.10	0.07	86.1	75.6	0.50
Jordan	405	**45**	-0.32	0.03	-0.07	81.8	65.4	0.33
Cyprus	404	**73**	-0.41	-0.02	-0.13	77.6	53.0	-0.17
Argentina	397	**81**	-0.76	-0.18	-0.07	67.5	71.2	0.21
Ecuador	396	**87**	-0.50	0.09	0.19	79.9	78.7	0.33
Indonesia	393	**50**	-0.43	0.40	0.46	94.5	92.5	1.00
El Salvador	381	**75**	-0.61	-0.06	-0.05	74.7	75.2	0.26
Lebanon	372	**76**	-0.48	-0.12	-0.02	87.8	55.2	0.31
North Macedonia	372	**59**	-0.62	0.20	0.06	84.6	75.7	0.34
Philippines	371	**78**	-0.22	0.06	0.32	91.2	65.2	0.70
Armenia	362	**40**	-0.29	-0.07	-0.01	88.4	80.3	0.47
Dominican Republic	361	**70**	-0.58	-0.05	-0.02	82.0	71.5	0.45
Kyrgyzstan	357	**42**	-0.42	-0.03	0.03	80.9	75.9	0.41
Morocco	357	**51**	-0.59	0.14	-0.04	81.5	70.5	0.39
Palestinian Authority	357	**42**	-0.90	-0.04	-0.13	78.5	66.2	0.31
Paraguay	356	**65**	-0.89	-0.03	0.00	76.0	78.5	0.35
Kosovo	351	**38**	-0.59	0.16	0.10	88.6	78.4	0.27
Guatemala	347	**78**	-0.71	0.08	0.10	80.4	81.9	0.46
Kenya	331	9	-0.39	0.23	0.28	93.7	76.7	0.69
Mauritius	m	m	-0.06	0.08	0.25	85.9	m	0.47
Rwanda	m	m	-0.67	-0.02	0.09	93.6	m	0.65
Cambodia	m	m	-0.68	m	m	92.9	m	m
Zambia	m	m	-0.73	0.12	0.28	81.2	m	0.27
Dushanbe (Tajikistan)	m	m	-0.97	-0.09	-0.06	76.5	m	0.69
Kurdistan Region (Iraq)	m	m	-0.99	0.08	-0.08	85.4	m	0.29

* Caution is required when interpreting estimates because one or more PISA sampling standards were not met. For Albania and the United States, particular caution is required when interpreting questionnaire results due to a coverage issue (see Reader's Guide).
Notes: Values that are statistically significant are marked in bold (see Annex A3).
Countries/economies with values **above** the OECD average.
Countries/economies with values **not significantly different** from the OECD average.
Countries/economies with values **below** the OECD average.
Countries and economies are ranked in descending order of the mean score in environmental science (science subscale).
Source: OECD, PISA 2025 Database, Tables I.B1.5.1, I.B1.5.4, I.B1.5.6, I.B1.5.11, I.B1.5.18, I.B1.5.33, I.B1.5.42 and I.B1.5.54.

Data for all snapshot tables are available on line:

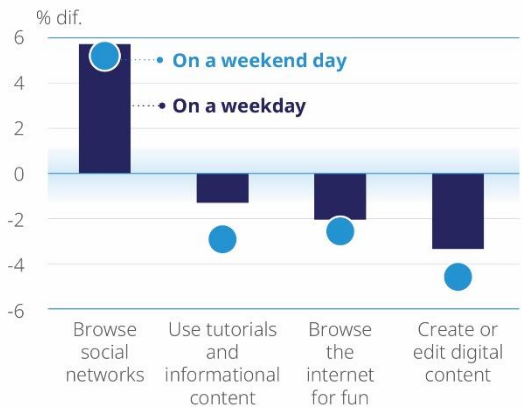
StatLink https://stat.link/z1xqot

Infographic 1. PISA 2025 key results



Social media shows the biggest shift in digital activities

Change between 2022 and 2025 in the share of students spending **over one hour a day on selected digital leisure activities.**



Computational problem solving overperformers

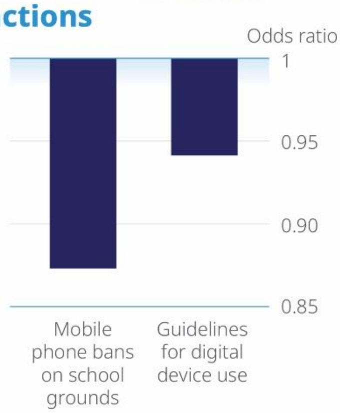
Average score

- 572 **Macao (China)**
- 563 **Singapore**
- 557 **Japan**
- 500 **OECD average**

These countries and economies **scored highly** in computational problem solving, with students **performing better than expected** given their science results.

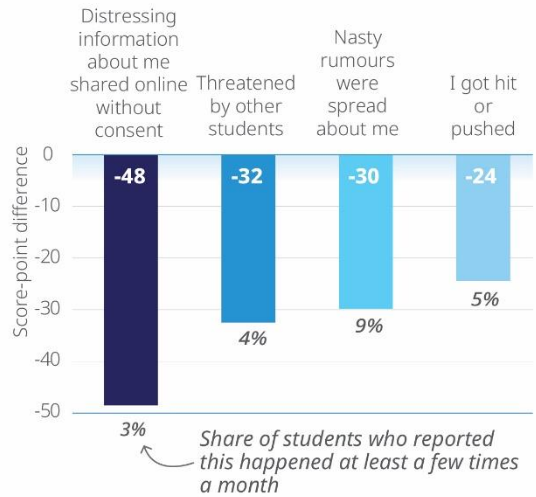
School policies linked to fewer digital distractions

In schools with **clear mobile phone policies** – whether bans or guidelines – students are **less likely to be distracted** by digital devices.



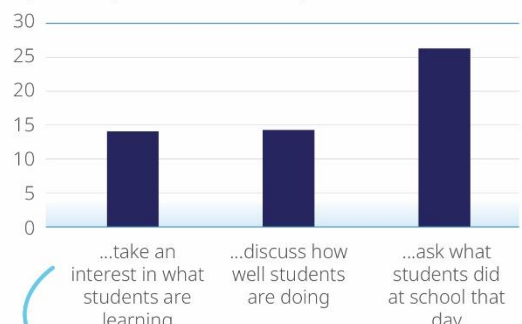
Values below 1 indicate a lower likelihood of distraction.

Bullying is linked to lower student performance



Parental interest in schooling is linked to higher student performance

Score-point difference associated with students who report that parents or other family members...



Yet students reported **less family support than in 2022** in almost all countries and economies.

Students interested in protecting the environment in their future career

Almost

2 in 3

students are interested in **protecting the environment in their future job...**

... but in some education systems the share is higher

- 93% **Viet Nam**
- 92% **Indonesia**
- 86% **Peru**
- 62% **OECD average**

What is PISA?

OECD's Programme for International Student Assessment (PISA)

What should citizens know and be able to do? In response to that question and to the need for internationally comparable evidence on student performance, the Organisation for Economic Co-operation and Development (OECD) launched the Programme for International Student Assessment (PISA) in 2000.

PISA is a regularly-conducted survey of 15-year-old students around the world that assesses the extent to which they have acquired key knowledge and skills essential for full participation in social and economic life. PISA assessments do not just measure whether students near the end of their compulsory education can reproduce what they have learned; they also assess how well students can extrapolate from what they have learned, both in and outside of school, and apply it to real-life problems.

What is unique about PISA?

PISA is unique because of its:

- **Policy orientation**, which links data on student learning outcomes – including students' attitudes towards learning – with data on students' backgrounds and key aspects that shape their learning, in and outside of school; by doing so, PISA can highlight differences in learning outcomes and identify the characteristics of students, schools and education systems that perform well.
- **Innovative concept of student competency**, which refers to students' capacity to apply their knowledge and skills in key areas, and to analyse, reason and communicate effectively as they identify, interpret and solve problems in a variety of situations.
- **Relevance to lifelong learning**, as PISA asks students to report on their motivation to learn, their beliefs about themselves, and their learning strategies.
- **Regularity**, which enables countries to monitor their progress in meeting key learning objectives.
- **Breadth of coverage**, which, in PISA 2025, encompassed 38 OECD countries and 53 partner countries and economies.

Which countries and economies participate in PISA?

PISA is used as an assessment tool in many regions around the world, participated in by:

- 43 countries and economies in the first assessment (32 in 2000 and 11 in 2002).
- 41 in the second assessment (2003).
- 57 in the third assessment (2006).
- 75 in the fourth assessment (65 in 2009 and 10 in 2010).
- 65 in the fifth assessment (2012).

- 72 in the sixth assessment (2015).
- 79 in the seventh assessment (2018).
- 81 in the eighth assessment (2022).[1]
- 91 in the ninth assessment (2025).

Table 1. PISA 2025 participating countries and economies

OECD Member countries in PISA 2025		Partner countries and economies in PISA 2025		
Australia	Japan	Albania	Jordan	Philippines
Austria	Korea	Argentina	Kazakhstan	Qatar[2]
Belgium[1]	Latvia	Armenia	Kenya	Romania[2]
Canada	Lithuania	Azerbaijan	Kosovo	Rwanda
Chile	Luxembourg	Brazil	Kurdistan Region (Iraq)	Saudi Arabia
Colombia[2]	Mexico	Brunei Darussalam	Kyrgyzstan	Serbia
Costa Rica	Netherlands	B-S-J-Z (China)	Lebanon	Singapore
Czechia[2]	New Zealand	Bulgaria[2]	Macao (China)	Chinese Taipei[2]
Denmark[2]	Norway	Cambodia	Malaysia	Thailand
Estonia	Poland	Croatia[2]	Malta	Ukrainian regions (17 of 27)[2]
Finland[2]	Portugal[2]	Cyprus[2]	Mauritius	United Arab Emirates
France[2]	Slovak Republic	Dominican Republic[2]	Moldova	Uruguay
Germany[2]	Slovenia	Dushanbe (Tajikistan)	Mongolia	Uzbekistan
Greece[2]	Spain[2]	Ecuador	Montenegro	Viet Nam
Hungary	Sweden[2]	El Salvador	Morocco	Zambia
Iceland	Switzerland	Georgia	North Macedonia	
Ireland	Türkiye	Guatemala	Palestinian Authority	
Israel[2]	United Kingdom	Hong Kong (China)	Paraguay	
Italy[2]	United States	Indonesia	Peru[2]	

1. Flemish community participated in the PISA 2025 Foreign Language Assessment (FLA).
2. This entity participated in the PISA 2025 FLA.

First-time participants in PISA 2025 include Armenia, Dushanbe (Tajikistan), Ecuador, Kenya, Kurdistan Region (Iraq), Rwanda and Zambia.[2]

Key features of PISA 2025

The content

The PISA 2025 assessment focused on science, along with reading, mathematics and computational problem solving.[3] In each round of PISA, one subject is tested in detail among the core subjects of science, reading and mathematics. The main subject in 2025 was science, as it was in 2006 and 2015. Reading was the main subject in 2000, 2009 and 2018. Mathematics was the main subject in 2003, 2012 and 2022.

With this alternating schedule, a thorough analysis of achievement in each of the three core subjects is presented every 9 (or 10) years; and an analysis of trends is offered every 3 (or 4) years.[4]

Learning in the digital world was assessed for the first time in PISA 2025.

The PISA 2025 Assessment and Analytical Framework (OECD, 2026[1]) presents definitions and more detailed descriptions of the subjects assessed in PISA 2025:

- Science proficiency is defined as students' capacity to engage with science-related issues, and with the ideas of science, as a reflective citizen, and to use them for informed decision making.
- Mathematics proficiency is defined as students' capacity to reason mathematically and to formulate, employ and interpret mathematics to solve problems in a variety of real-world contexts.
- Reading proficiency is defined as students' capacity to understand, use, evaluate, reflect on and engage with texts in order to achieve goals, develop knowledge and potential, and participate in society.
- Learning in the digital world (LDW) proficiency is defined as students' capacity to engage in an iterative and self-regulated process of knowledge building and problem solving using computational tools and practices.

For the first time, as part of PISA 2025, 22 countries and economies measured their students' foreign language competence in English, through an assessment that was administered to a separate representative sample of students who study or have studied English as a foreign language in school. This optional assessment was aimed at countries and economies with an interest in the topic and where English is not the main language of instruction. The assessment allowed for the generation of comparable data on students' foreign language proficiency and invaluable insights into best practices for teaching and learning a foreign language.

See Annex C for examples of PISA test questions.

The students

Over 760 000 students completed the assessment in 2025, representing about 33 million 15-year-olds in the schools of the 91 participating countries and economies.

PISA students are aged between 15 years 3 months and 16 years 2 months at the time of the assessment, and they have completed at least 6 years of formal schooling. Using this age across countries and over time allows PISA to consistently compare the knowledge and skills of individuals born in the same year who are still in school at age 15, despite the diversity of their education histories in and outside of school. They can be enrolled in any type of institution, participate in full-time or part-time education, in academic or vocational programmes, and attend public or private schools or foreign schools within the country.

The population of PISA-participating students is defined by the 2025 PISA Technical Standards (link), as are the students who are excluded from participating. The overall exclusion rate within a country is required to be below 5% to ensure that, under reasonable assumptions, any distortions in national mean scores would remain within plus or minus five score points, i.e. typically within the order of magnitude of two standard errors of sampling. Exclusion could take place either through the schools that participated or the students who participated within schools. There are several reasons why a school or a student could be excluded from PISA. Schools might be excluded because they are situated in remote regions and are inaccessible, because they are very small, or because of organisational or operational factors that precluded participation. Students might be excluded because of intellectual disability or limited proficiency in the language of the assessment. See Annex A2 and the PISA 2025 Technical Report (OECD, forthcoming[2]) for details.

The assessment

As was done in 2015, 2018 and 2022, computer-based tests were used in most countries and economies in PISA 2025, with assessments lasting a total of two hours for each student. In science, mathematics and reading, a multi-stage adaptive approach was applied in computer-based tests whereby students were assigned a block of test items based on their performance in the preceding blocks.

Test items were a mixture of multiple-choice questions and questions requiring students to construct their own responses. The items were organised in groups based on a passage setting out a real-life situation. Examples of PISA test items can be found in Annex C. More than 11 hours of test items for science, reading, mathematics and learning in the digital world were covered, with different students taking different combinations of test items. See the PISA 2025 Technical Report (OECD, forthcoming[2]) for details.

In addition, PISA 2025 retained a paper-based version of the assessment that included only trend items for science, reading and mathematics. This paper-based assessment was implemented in six countries and economies: Cambodia, Dushanbe (Tajikistan), Kurdistan Region (Iraq), Mauritius, Rwanda and Zambia.

The questionnaires

Students answered a background questionnaire, which took about 35 minutes to complete. The questionnaire sought information about the students' attitudes, dispositions and beliefs, their homes, and their school and learning experiences. School principals completed a questionnaire that covered school management and organisation, and the learning environment. Countries/economies could also choose to add an optional questionnaire for students: a questionnaire about students' familiarity with computers. While the core student questionnaire covers basic questions on students' use of digital devices and AI, the optional questionnaire includes more granular questions.

Some countries/economies also distributed additional questionnaires to elicit more information. These included: a questionnaire for teachers asking about themselves and their teaching practices; and a questionnaire for parents asking them to provide information about their perceptions of and involvement in their child's school and learning.[5]

Where can you find the results?

The initial PISA 2025 results are released in three volumes:

- ***Volume I: Future-ready Students*** (OECD, 2026[3]) examines whether young people are prepared to thrive – and eventually lead – in a rapidly changing and interconnected world where lifelong learning beyond formal education is essential. Taking a multi-dimensional view of learning shaped by cognitive, emotional and social aspects, the volume analyses 15-year-old students' proficiency in science, reading, mathematics and computational problem solving (learning in the digital world), alongside engagement-related attitudes and dispositions reported by the students, such as curiosity, perseverance and learner agency. Students' outcomes are considered within their broader contexts, including safe and fair learning environments and the support provided by families and schools. The volume concludes with an assessment of students' readiness to respond to environmental challenges.
- ***Volume II: Connected through English*** (OECD, forthcoming[4]) examines students' proficiency in reading, listening and speaking in English as a foreign language in the 22 countries and economies that participated in this optional assessment. The volume explores how proficiency in each of these skills relates with proficiency in the others and how it varies across socio-demographic factors. It also offers an overview on where and how 15-year-olds learn and practice English, and on what role they perceive English having in their present and future. In addition, it explores which school factors are related to differences in English-language performance between schools and provides insights for policy and practice informed by the data.
- ***Volume III: Effective Learners in the Digital World*** (OECD, forthcoming[5]) examines how students self-regulate their learning and problem solving using computational tools. The volume makes extensive use of student response process data to shed light on how students managed their task engagement, the strategies they used to make progress on the test, and whether they engaged in self-evaluation and reflection. It highlights how self-regulated learning processes support performance outcomes and unpacks differences in learning and problem-solving approaches across countries and economies, student groups and task types.

References

OECD (2026), *PISA 2025 Assessment and Analytical Framework*, PISA, OECD Publishing, Paris, https://doi.org/10.1787/86c36975-en. [1]

OECD (2026), *PISA 2025 Results (Volume I): Future-Ready Students*, PISA, OECD Publishing, Paris, https://doi.org/10.1787/73451bc5-en. [3]

OECD (forthcoming), *PISA 2025 Results (Volume III): Effective Learners in the Digital World*. [5]

OECD (forthcoming), *PISA 2025 Technical Report*, OECD Publishing, Paris. [2]

OECD (forthcoming), *PISA 2025Results (Volume II): Connected through English*. [4]

Notes

[1] While the eighth assessment was originally planned for 2021, the PISA Governing Board postponed the assessment to 2022 because of the many difficulties education systems faced due to the COVID-19 pandemic.

[2] Ecuador and Zambia participated in the PISA for Development programme.

[3] Computational problem solving was measured as a part of PISA 2025 innovative domain, “learning in the digital world.”

[4] After the seventh round of PISA (PISA 2018), the eighth round was originally planned for 2021. However, due to the pandemic, it was delayed by one year and conducted in 2022.

[5] From the optional questionnaires, 44 countries and economies implemented the ICT familiarity questionnaire for students, 18 countries and economies implemented the parent questionnaire, and 20 countries implemented the teacher questionnaires (for science and/or foreign language assessment).

1 Multidimensional student learning in PISA 2025

This chapter offers a concise overview of several key dimensions of student learning highlighted by the PISA 2025 results. Drawing on evidence from the 2025 assessment and questionnaires, it highlights three core elements for high-functioning education systems: the characteristics of competent learners, the importance of safe and fair learning environments, and the role of supportive families and schools. The chapter also examines students' readiness to address environmental challenges.

The multidimensional framework for competent learners

Are young people prepared to thrive – and eventually lead – in an increasingly complex and interconnected world? As societies and labour markets change at an accelerating pace, it is important for students to develop knowledge, skills and attitudes that form the foundation for lifelong learning. Upskilling and reskilling have become indispensable to ensure that individuals are able to adapt to changing demands and thrive in their personal and professional lives over time. Much of learning will need to take place beyond formal education systems. As a result, learners are increasingly required to take ownership of what they learn, how and where they learn, and when learning occurs across their lives. In response, education systems need to consider ways to better foster engagement, learner agency and the development of effective learning strategies.

Learning is a dynamic process shaped by cognitive, emotional, social and physical dimensions, all of which interact continuously with the surrounding learning environment and context.[1] Reflecting this complexity, PISA examines student learning from multiple perspectives, with competent learners characterised across several dimensions including academic performance, curiosity, perseverance and self-regulation. As illustrated in Figure I.1.1, the PISA framework for competent learners situates learners within their contexts and relationships, recognising how environments, conditions and experiences are intertwined with learning. Safe and fair learning environments comprise students' sense of belonging and a positive school climate where students feel safe and which is associated with more student engagement and higher proficiency. Supportive families and schools are equally as important in regard to students' development of competencies needed to succeed in school and beyond, and involve support from parents/guardians, family members and teachers, as well as sufficient teaching resources and staff in schools.

Figure I.1.1. PISA 2025's multidimensional framework for competent learners

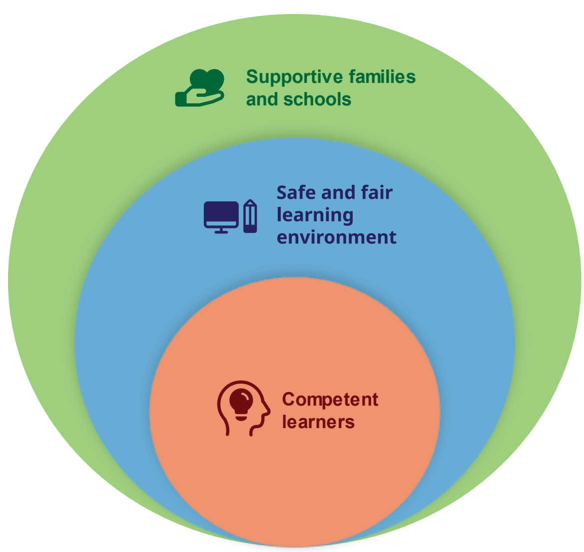


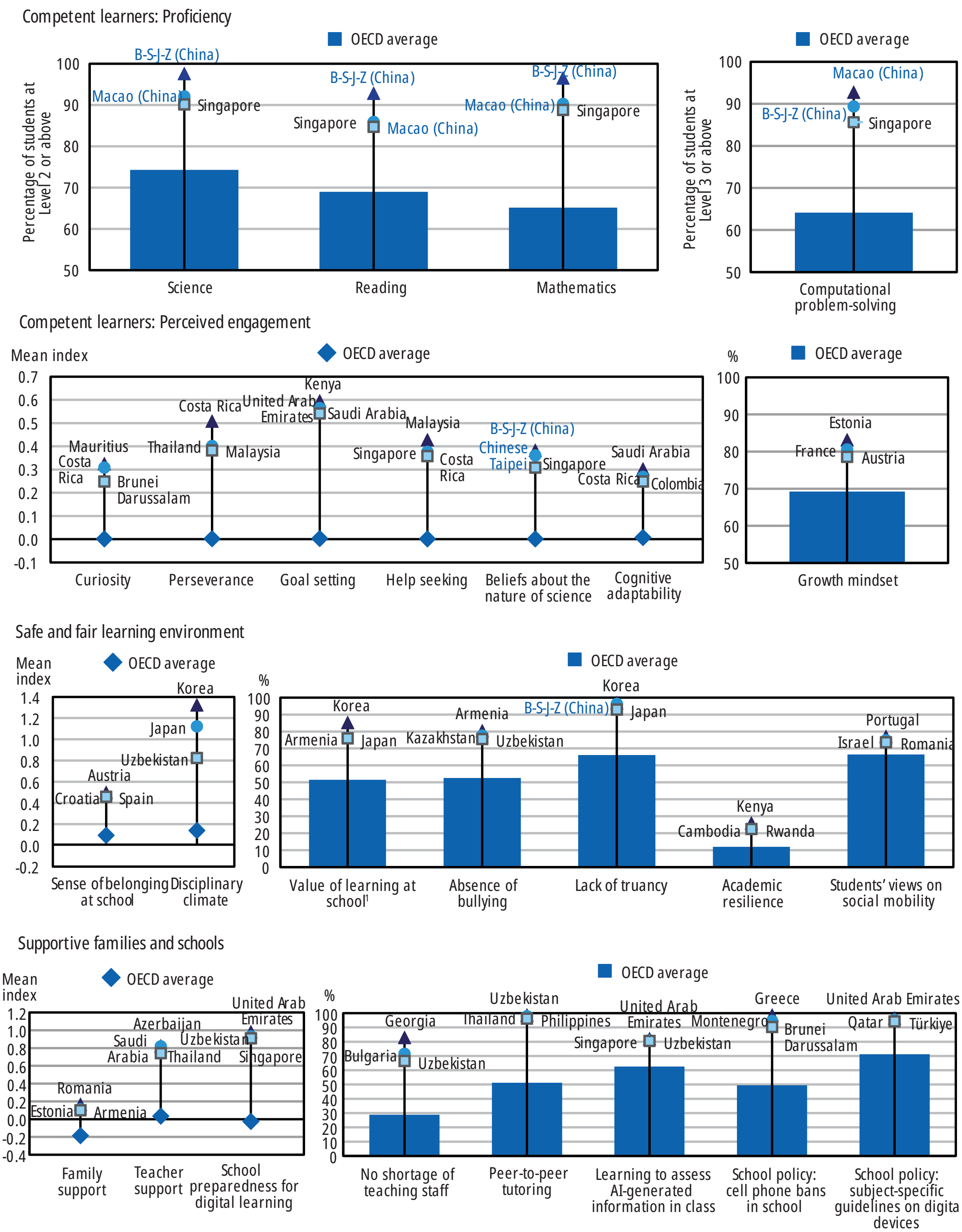
Figure I.1.2[2] below uses PISA 2025's multidimensional approach to extract several key characteristics of competent learners, safe and fair learning environments, and supportive families and schools. Competent learners are defined here by the combination of two key dimensions: student proficiency and engagement in learning.

An interactive version of Figure I.1.2 is available in the PISA Dashboard, where users can select a country or economy of interest and generate visualisations of multidimensional student learning.

When interpreting PISA results, it is important to consider that differences in results should be examined in light of various contexts such as socio-economic status, cultural and language backgrounds, and institutional characteristics. Moreover, PISA reflects the cumulative learning experiences of students up to age 15, rather than outcomes attributable to a single point in time or specific policy.

Figure I.1.2. Multiple dimensions of student learning

OECD average and top three education systems



1. The value of learning at school is measured by the percentage of students who disagree or strongly disagree that "School has done little to prepare me for adult life when I leave school".

Source: OECD, PISA 2025 Database, Tables I.B1.1.3, I.B1.2a.10, I.B1.2a.11, I.B1.2a.12, I.B1.2a.13, I.B1.2b.2, I.B1.3.1, I.B1.3.9, I.B1.3.16, I.B1.3.30, I.B1.3.40, I.B1.3.44, I.B1.3.49, I.B1.3.62, I.B1.3.70, I.B1.4.14, I.B1.4.47, I.B1.4.68, I.B1.4.71, I.B1.4.101, I.B1.4.113, I.B1.4.120, I.B1.4.132, I.B1.4.138 and I.B1.4.158. See https://stat.link/3r8tyd for the underlying data.

Competent learners

Proficient and/or engaged learners

Competent learners are those who not only understand what they have learned, but can also use that knowledge and skills effectively, apply it with confidence in real-world situations, and continue to apply it throughout their lives, beyond formal education settings. This also requires a willingness to learn, supported by curiosity and perseverance. As a working definition, competent learners can be understood in terms of two key dimensions: proficiency and engagement.

Across multiple indicators of the proficiency dimension on **science, reading, mathematics and computational problem-solving**,[3] a consistent group of education systems emerges as the top-performing systems across different domains (Figure I.1.2, first panel). Details of student proficiency in these domains are discussed in Chapter 2.

Results of students' self-reported engagement indicators are more varied, with different systems leading different measures. While student engagement is discussed in detail in Chapter 3, an overview is provided in Figure I.1.2 (second panel):

- The first two indicators are related to students' motivation to learn: **curiosity** and **perseverance**.
- The next two concern self-regulated learning, especially focusing on **goal setting** and **help seeking.**
- The last three are learning-related beliefs and behaviours, including **growth mindset**, **beliefs about the nature of science** and **cognitive adaptability**.

Comparing the first and the second panels, systems leading the proficiency dimension only partially overlap with those leading the engagement dimension. This contrast suggests that strong academic performance does not necessarily lead to high levels of student perceived engagement, and the reverse is also true, underscoring the need for policies that address learning outcomes as multidimensional.

When comparing student self-reports across countries and economies, it is important to note that results may be influenced by differences in student response styles and cultural norms. Therefore, caution is needed when interpreting cross-national comparisons, as the data reflect students' perceptions rather than objective measures. Nonetheless, presenting these results remains valuable, as they provide meaningful insights into how young people perceive and report their own engagement, offering an important perspective on students' experiences.

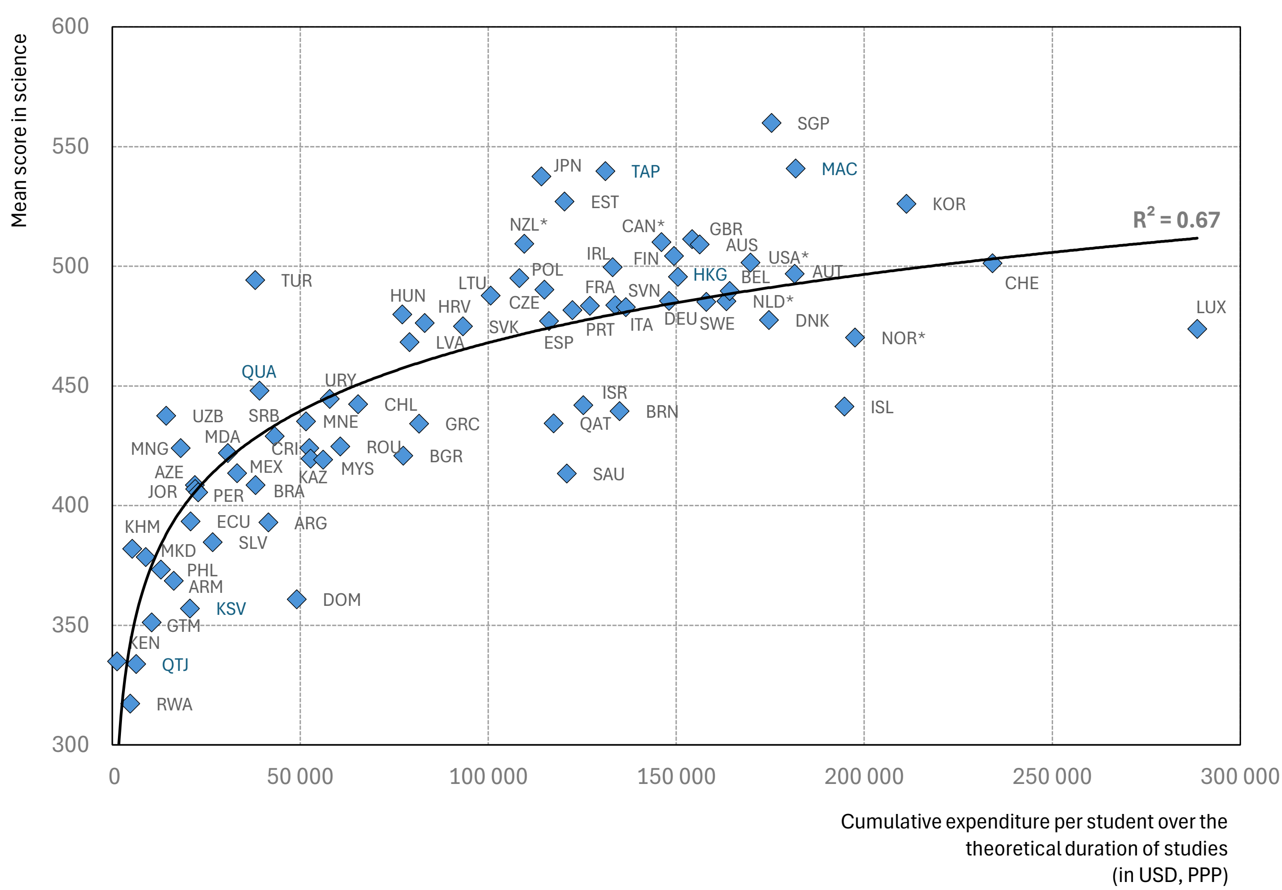
Systems' economic and social conditions

The economic and social conditions of different countries/economies, which are often beyond the control of education policymakers and educators, can influence student performance. For example, the relative prosperity of some countries allows them to spend more on education while other countries find themselves constrained by a lower national income. It is therefore important to keep the national wealth of countries in mind when interpreting the performance of education systems across countries and economies. In a simple bivariate relationship, 50% of the variation in countries'/economies' average scores is related to per-capita GDP (9% in OECD countries). Countries with higher national incomes tend to score higher in PISA assessments. However, the relationship is not linear and it flattens among those with relatively higher national incomes (Tables I.B1.2a.1 and I.B3.2.1).

While per-capita GDP reflects the potential resources available for education in each country, it does not directly measure the financial resources actually invested in education. Figure I.1.3 compares countries' cumulative spending per student from the age of 6 up to 15, after accounting for purchasing power parity, (hereafter, "spending per student") with average student performance in science. Education systems with higher spending per student tend to achieve higher scores in science, but only up to a point. Above approximately USD 85 000 per student, the two begin to decouple. This shows that education needs to be adequately resourced and is often under-resourced in developing countries. At the same time, beyond a certain threshold of spending, higher spending per student does not automatically relate to higher performance scores. Increased spending needs to be accompanied by the effective allocation and use of financial resources if it is to translate into improvement in education.[4]

Unlike the proficiency dimension, student engagement shows no clear association with education spending. Across education systems, there is no consistent relationship between spending and students' self-reported curiosity (see online Figure I.1.o1). While a negative relationship is observed between spending and students' self-reported perseverance, this association is weak (see online Figure I.1.o2). These findings suggest that greater investment does not automatically guarantee stronger engagement, as perceived by students, and strong perceived engagement can exist even with lower levels of spending.[5]

Figure I.1.3. Science performance and spending on education



Note: Only countries and economies with available data are shown. Please refer to the Reader's Guide for countries' and economies' ISO codes.
Source: OECD, PISA 2025 Database, Tables I.B1.2a.1 and I.B3.2.2. See https://stat.link/3r8tyd for the underlying data.

Global talent pool of future science innovators

Among the many possible ways to measure the global talent pool of future contributors to scientific innovation, Figure I.1.4 presents one scenario based on students' proficiency in science and their willingness to contribute to STEM (science, technology, engineering and mathematics) occupations in the future. A strong foundation in scientific proficiency enables students to understand complex problems, think critically and develop effective solutions. At the same time, motivation and readiness to engage in STEM fields drive students to apply their knowledge in real-world contexts, collaborate with others and pursue innovation. Together, these aspects foster the knowledge, skills and attitudes needed to achieve scientific advancements and address global challenges.

The left panel of Figure I.1.4 below presents the estimated number of top performers in science, i.e. those who are proficient at Level 5 or 6. Around 1.9 million students are considered top performers in science across the 91 countries and economies that participated in PISA 2025. The figure also shows how much each country and economy contribute to the global talent pool.

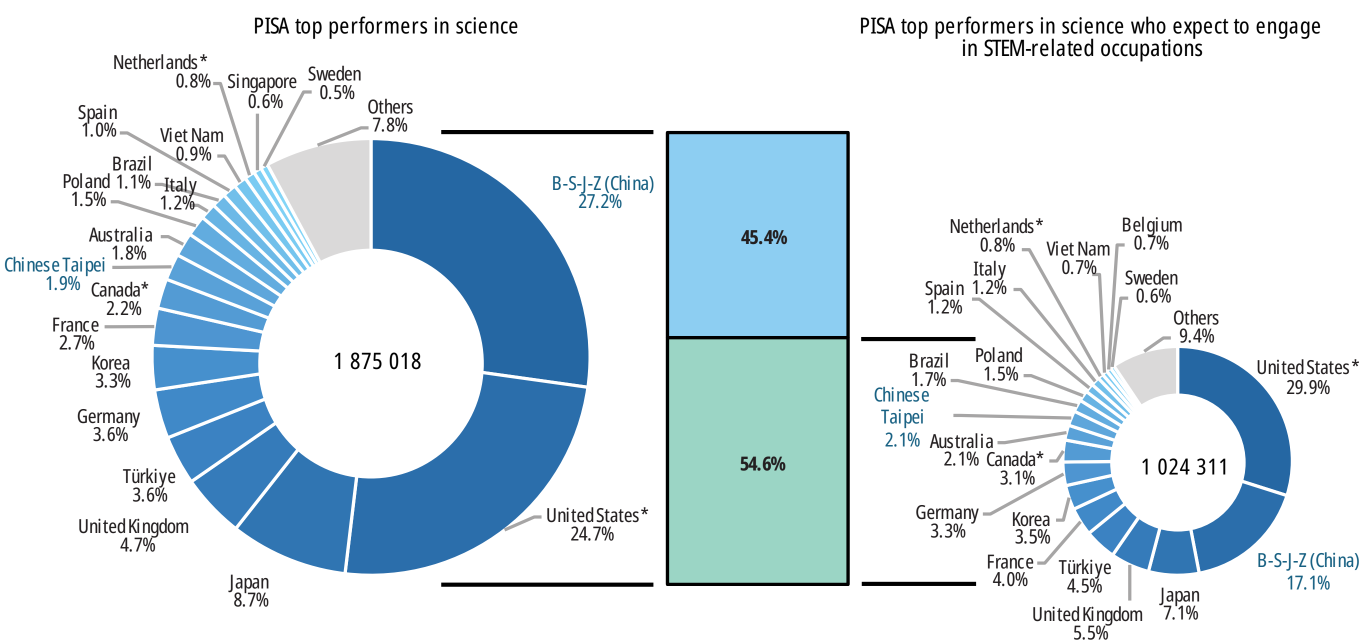
The size of countries and economies should be considered when looking at countries/economies' contributions to the global pool of top-performing students. For example, even though the proportion of top performers in science is comparatively small in the United States*, because of its population size and the overall number of 15-year-old students that the PISA sample represents, this country represents one-fourth of the total top performers shown in the left panel of Figure I.1.4. In contrast, Singapore, which has one of the largest shares of 15-year-olds performing at Level 5 or 6 on the PISA science scale, contributes less than 1% to the global pool of top-performing students because its population is relatively small.

The right panel of Figure I.1.4 excludes, from the global pool of top performers, students who reported that they do not expect to work in STEM-related occupations at age 30, leaving 1.02 million students in the global talent pool of future science innovators. In other words, 55% of top performers in science expect to engage in STEM-related occupations.

The proportion of top performers who expect to engage in STEM-related occupations varies across countries and economies. Therefore, the proportions of individual countries/economies' contributions to the talent pool differ between two panels. On the right panel, the United States* contributes by 30%, B-S-J-Z (China) by 17%, Japan by 7%, the United Kingdom by 5%, and Türkiye and France by 4%.

Figure I.1.4. The global pool of future science innovators across 91 countries and economies

The estimated total number of top performers in science who expect to engage in STEM-related occupations, and individual countries/economies' contributions to the global talent pool



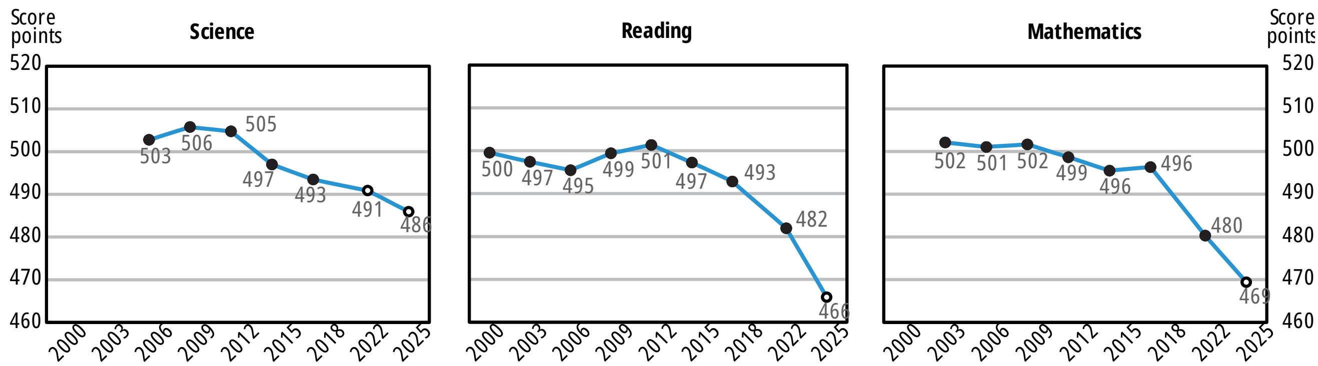
Note: These figures cover all 91 countries and economies that participated in PISA 2025 in order to present the broadest possible global picture. However, some of these participants did not meet one or more PISA sampling standards (see the Reader's Guide for details), and their results should therefore be interpreted with caution.
Source: OECD, PISA 2025 Database. See https://stat.link/3r8tyd for the underlying data.

Trends over time

The average trend across OECD countries is negative (Figure I.1.5). Performance in PISA 2025 was the lowest in all subjects, significantly below the mean performance observed in any earlier assessment (except PISA 2022, in science). In mathematics, performance remained close to the 2003 level through all assessments up to 2018, then dropped sharply between 2018 and 2025. In reading and science, the strongest performance was observed in 2012 and 2009, respectively, then the trajectory turned negative. See Chapter 2 for further details about PISA trends over time.

Figure I.1.5. Trends in performance over time in science, reading and mathematics

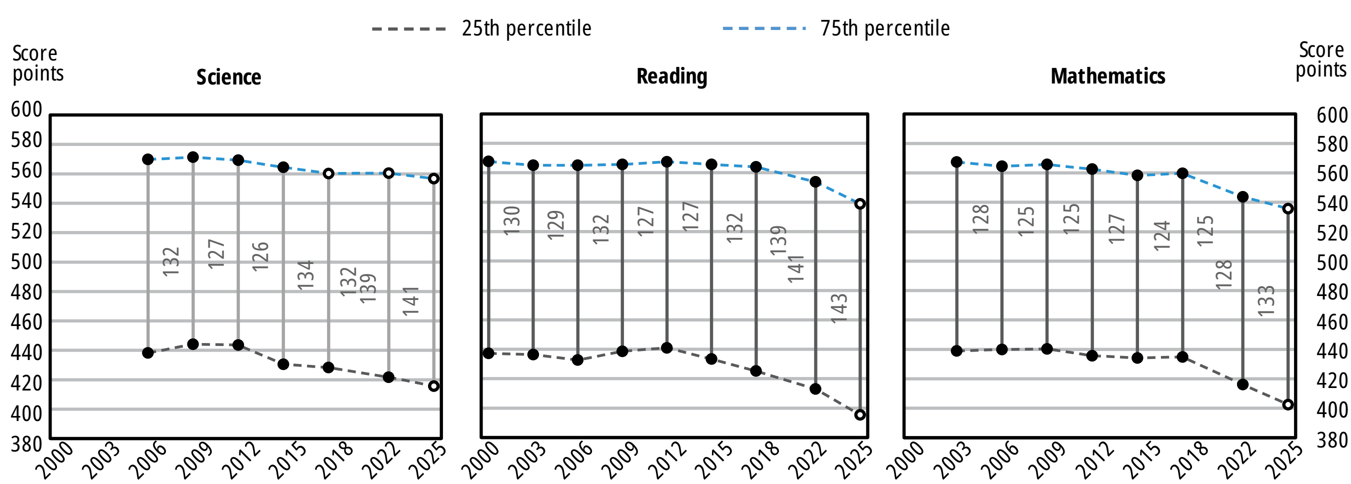
OECD average-23



Note: White dots indicate mean-performance estimates that are not statistically significantly above/below PISA 2025 estimates.
Source: OECD, PISA 2025 Database, Tables I.B1.2a.36, I.B1.2a.37 and I.B1.2a.38. See https://stat.link/3r8tyd for the underlying data.

Figure I.1.6. Trends in low- and high-achievers over time in science, reading and mathematics

OECD average-23



Note: White dots indicate mean-performance estimates that are not statistically significantly above/below PISA 2025 estimates.
Source: OECD, PISA 2025 Database, Tables I.B1.2a.39, I.B1.2a.40 and I.B1.2a.41. See https://stat.link/3r8tyd for the underlying data.

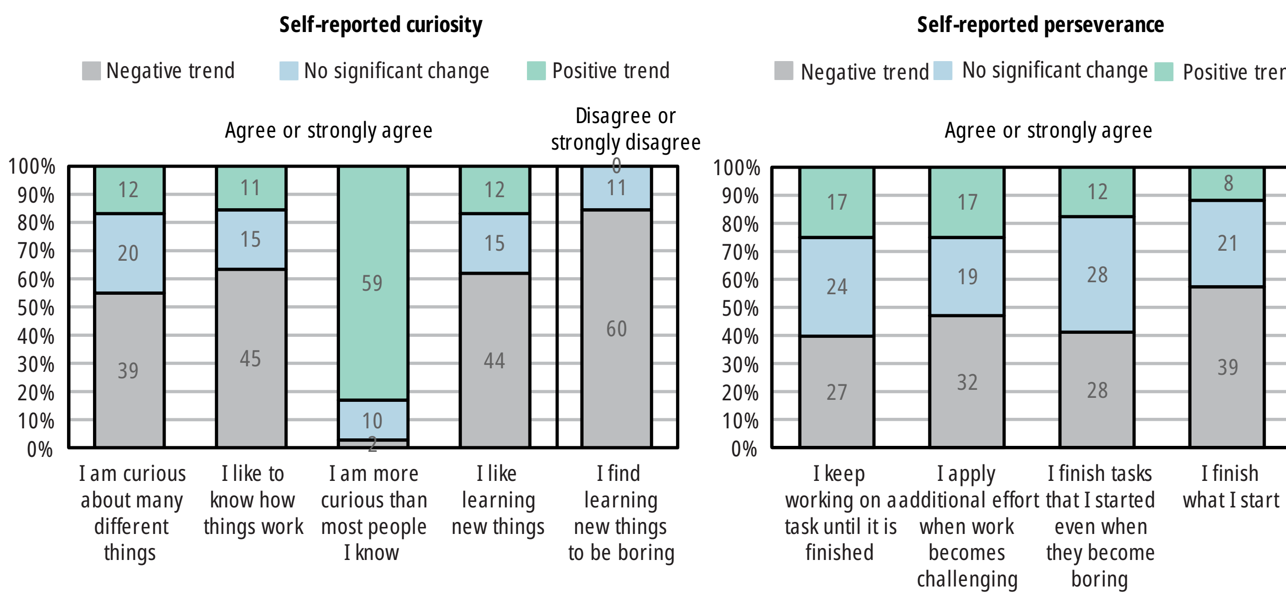
The magnitude of performance declines varies across achievement levels. As shown in Figure I.1.6, students at the lower end of the performance scale (the 25th percentile) experience steeper declines than those at the higher end (the 75th percentile). Over the last 10 years, between 2015 and 2025, low-achievers' scores declined by 15 points in science, 38 points in reading and 32 points in mathematics. In contrast, over the same period, high-achievers' scores declined by 8 points in science, 27 points in reading and 23 points in mathematics. Box I.2.2 in Chapter 2 provides context for interpreting changes in PISA scores, showing that average yearly learning gains are equivalent to roughly 20 score points in any subject. However, learning gains vary widely across systems due to differences in schooling, resources and education quality, and they also change over time; so a snapshot at age 15 may not reflect gains over subsequent years. Furthermore, average performance gains may not reflect those at the higher or lower ends of the performance distribution.

Trends in perceived engagement

Some engagement items measuring curiosity and perseverance were implemented both in PISA 2022 and 2025.[6] Figure I.1.7 presents the number of countries and economies that recorded positive, negative or no significant changes between 2022 and 2025 for each item measuring self-reported curiosity and perseverance. With one exception, the results show negative trends, indicating reduced self-reported curiosity and perseverance in most education systems in 2025. The exception is a rise in the proportion of students in 2025 who report being more curious than most people they know in 59 countries and economies.

Figure I.1.7. Trends in student perceived engagement over time

Number of countries and economies with positive, negative or no significant change in students' reported engagement between 2022 and 2025



Source: OECD, PISA 2025 Database, Tables I.B1.3.2 and I.B1.3.10. See https://stat.link/3r8tyd for the underlying data.

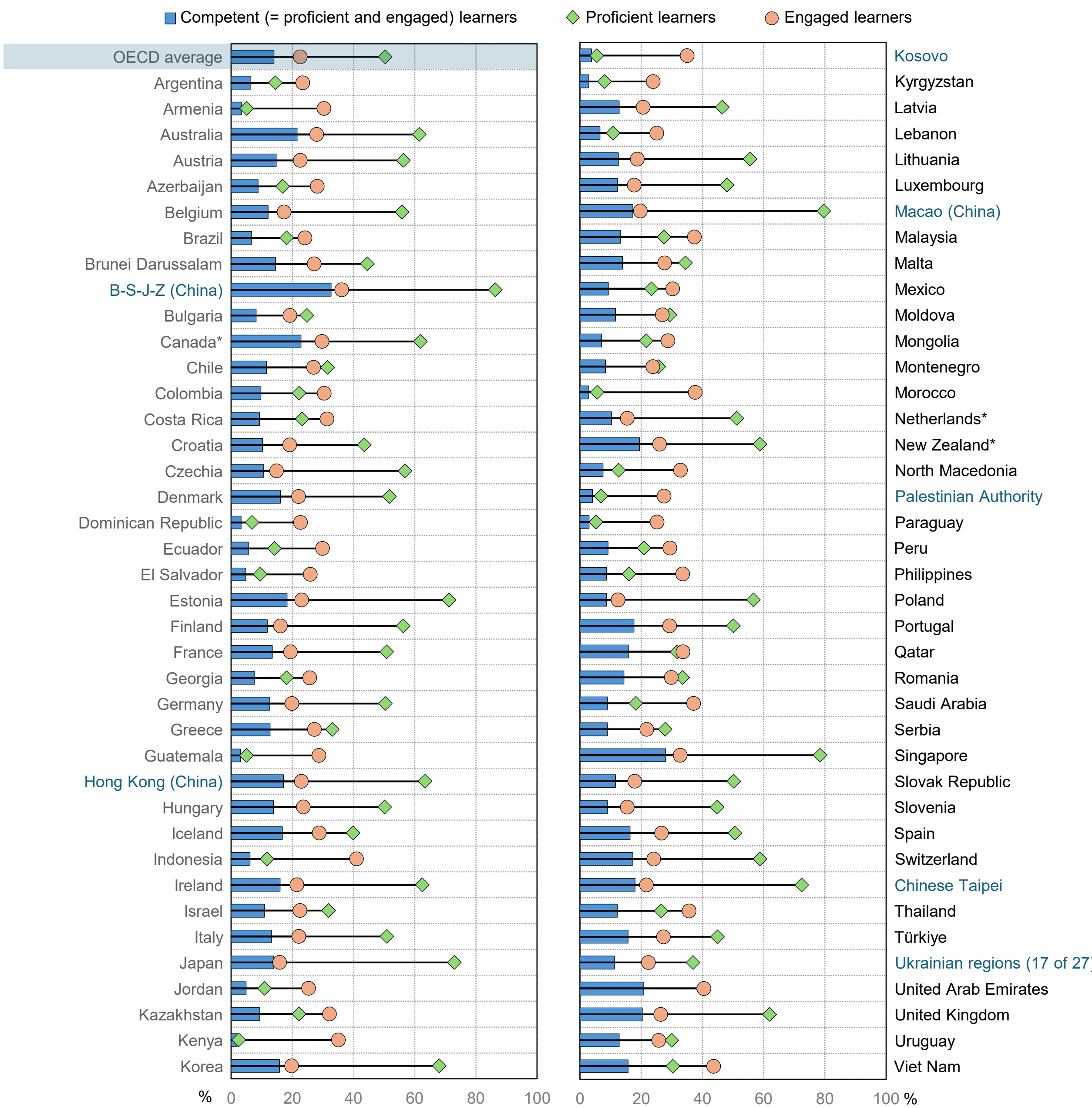
Proficiency and perceived engagement

Relationships in PISA 2025

Student proficiency and engagement are closely interrelated, as examined in Chapter 3. Although they often influence one another in shaping learning outcomes, this section treats them as analytically distinct in order to enable clearer examination of systems' strengths and the challenges they face.[7]

Figure I.1.8 shows where individual education systems stand in light of learner proficiency and engagement. While proficient and engaged learners could be defined in many different ways, this figure provides an example focusing on certain aspects. Proficient learners are defined based on students' performance in science, reading, mathematics and computational problem-solving.[8] Engaged learners are defined based on curiosity, perseverance, goal setting and help seeking.[9] Competent learners are those who meet the criteria for both proficient and engaged learners.

Figure I.1.8. Competent, proficient and engaged learners



Note: Only countries and economies with available data are shown.
Countries and economies are ranked in descending order of the percentage of competent learners, who are both proficient and engaged.
Source: OECD, PISA 2025 Database, Tables I.B1.1.1 and I.B1.1.2. See https://stat.link/3r8tyd for the underlying data.

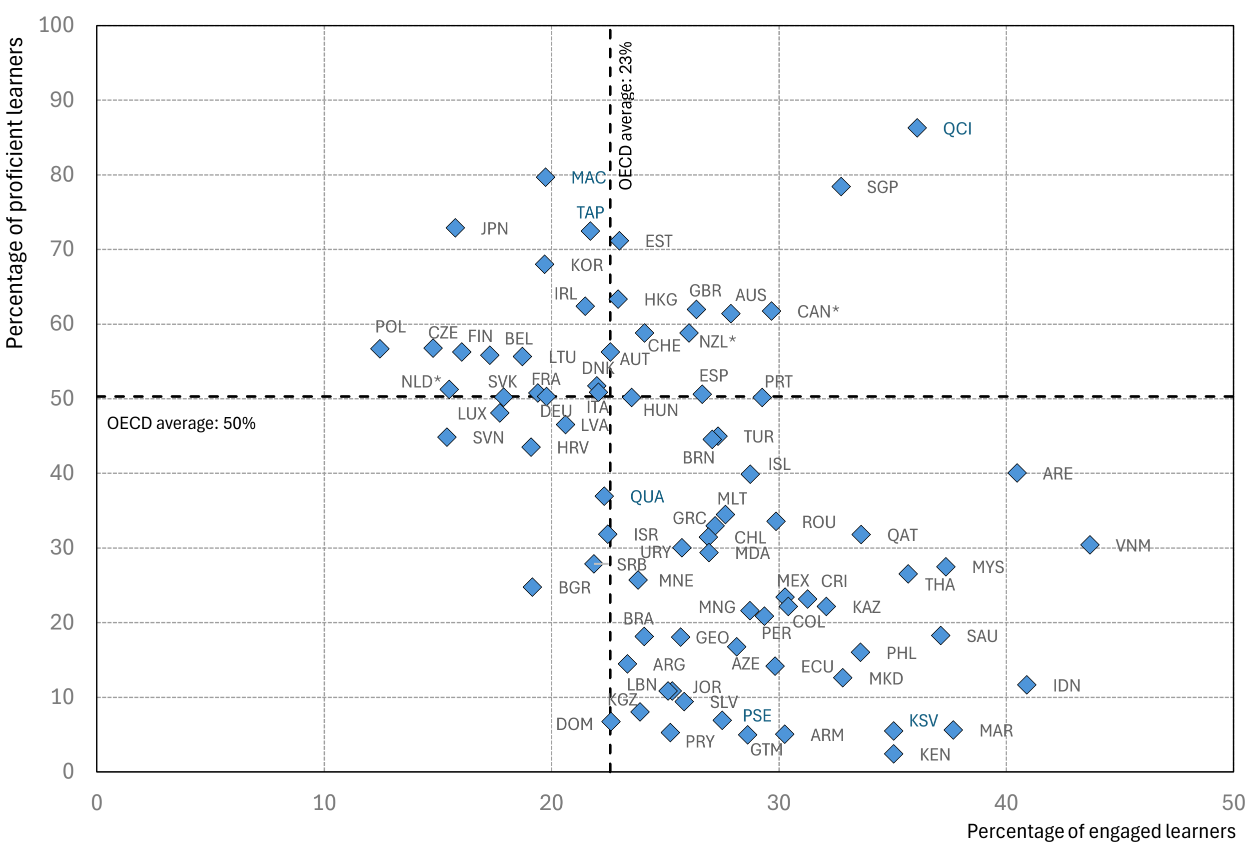
When these two perspectives are combined, on average across OECD countries, 14% of students both report the set of engagement-oriented attitudes and perform above certain proficiency levels (Figure I.1.8). Even among the countries and economies where over two-thirds of students are proficient, only in Singapore and B-S-J-Z (China) do more than one-quarter also report this broader engagement profile (28% and 33%, respectively). Conversely, among the countries and economies where fewer than 10% of students are proficient across all PISA domains, Kenya, Kosovo and Morocco still show over one-third of students with this engaged but non-proficient profile, ranging from 35% to 38%.

These contrasts suggest that proficiency and engagement overlap but do not align with each other completely. Stronger academic performance does not automatically imply stronger motivational engagement, just as positive attitudes towards learning do not always coincide with equally strong academic results.

Distinct patterns in proficiency and engagement are also evident when individual education systems are plotted across the two measures, as shown in Figure I.1.9. Education systems with below-average proficiency compared to the OECD average tend to report higher levels of student engagement (i.e. those located in the bottom-right quadrant). By contrast, among systems with around-average or above-average proficiency, the share of engaged learners varies. It is below average in some systems (top-left quadrant) and above average in others (top-right quadrant).

For education systems, these distinct patterns in proficiency and engagement matter because they indicate that engagement in learning should not be viewed simply as a by-product of academic success, nor should academic performance be used as a proxy for students' broader engagement with learning. Each outcome warrants attention in its own right. The challenge for schools, therefore, is to create conditions that enable more students to develop both the competencies and the orientations that support learning over time.

Figure I.1.9. Engaged learners and proficient learners



Note: Only countries and economies with available data are shown. Please refer to the Reader's Guide for countries' and economies' ISO codes.
Source: OECD, PISA 2025 Database, Table I.B1.1.1. See https://stat.link/3r8tyd for the underlying data.

Relationships between trends

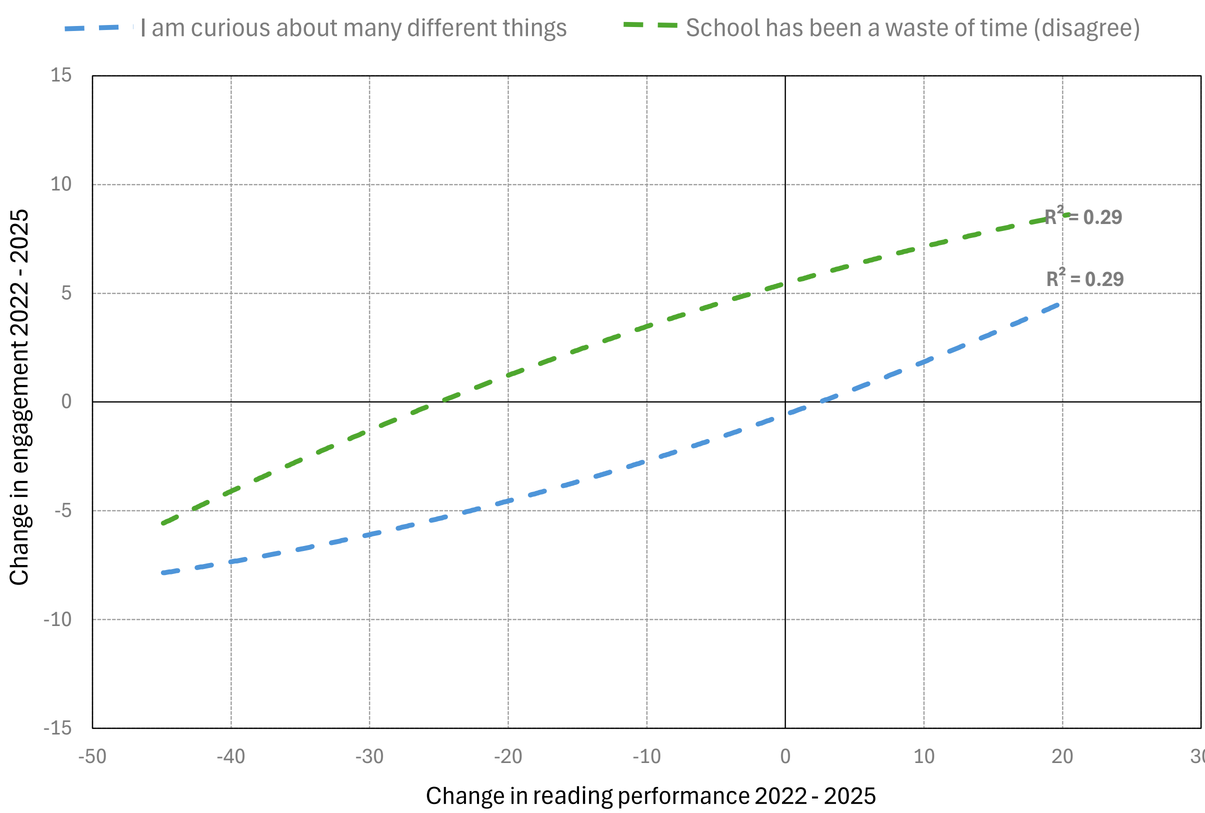
Trends in student proficiency and engagement are closely interrelated. Countries and economies that show more negative trends in performance also tend to show more negative trends in engagement.

For example, in a majority of countries and economies, fewer students in 2025 agreed or strongly agreed that they are curious about many different things than in 2022, as shown in Figure I.1.7. Those with more negative declines in curiosity between 2022 and 2025 tend to show steeper performance declines in reading, as shown in Figure I.1.10. Conversely, systems showing positive (or less negative) performance trends in reading between 2022 and 2025 tend to show positive (or less negative) trends in self-reported curiosity during the same period.

Trends in students' views on the usefulness of school are also closely related to performance trends. In over half of countries and economies with available data, less students in 2025 reported that school has been a waste of time than in 2022 (Table I.B1.3.71). Between 2022 and 2025, countries and economies with a steeper increase in students' views on the usefulness of school are also those showing a steeper increase in reading performance (Figure I.1.10).

While Box I.2.3 in Chapter 2 provides a detailed discussion on potential drivers for the declines in reading performance, it is important to highlight here that not only performance, but also other key outcomes are declining simultaneously in many systems. This makes it even more important to consider students' learning from a multidimensional perspective, rather than isolating performance from other key outcomes.

Figure I.1.10. Trends in engagement and trends in performance



Note: Only countries and economies with available data are used.
Source: OECD, PISA 2025 Database, Tables I.B1.2a.37, I.B1.3.2 and I.B1.3.71. See https://stat.link/3r8tyd for the underlying data.

Safe and fair learning environments

Student proficiency and engagement are developed within specific contexts of safe and fair learning. The third panel of Figure I.1.2 illustrates these contexts.

The third panel of Figure I.1.2 considers:

- **Students' sense of belonging at school** and **their views on the value of schooling**. These are discussed in Chapter 3.
- How the school environment is conducive to learning, which includes **disciplinary climate**, **the absence of bullying** and **low levels of truancy**. These are discussed in the latter half of Chapter 4.
- The fairness of the learning environment, where students' socio-economic background does not determine their future. More specifically, **academic resilience** and **students' views on social mobility.** The former is discussed in Chapter 2 and the latter is discussed in Box I.1.1.

Students' sense of belonging at school, their views on the value of schooling, school disciplinary climate, the absence of bullying, and low levels of truancy all show positive relationships with most of the outcomes included in the first and second panels of Figure I.1.2. For example, students' sense of belonging at school is positively related to performance in science, curiosity, perseverance, goal setting, help seeking and three other indicators included in the second panel (see Table I.3.1 in Chapter 3). Similarly, disciplinary climate is positively associated with performance in science, curiosity, perseverance, goal setting and help seeking (see Table I.4.1 in Chapter 4). These results should be interpreted with caution as they do not, on their own, establish causal relationships.

Academic resilience reflects fairness in education systems. Academically resilient students are those from disadvantaged socio-economic backgrounds who nevertheless perform among the top students in science in their country or economy. Students who perceive higher levels of social mobility are more likely to be academically resilient (Box I.1.1).

Supportive families and schools

The fourth panel of Figure I.1.2 consists of two groups of indicators. The first group covers the following four indicators which are related to various key outcomes as shown in Table I.4.1 in Chapter 4:

- Parents' or guardians' interest in students' day-to-day learning and school experience is measured by **family support.**
- Adequate and supportive teachers and peer-to-peer support are measured by **teacher support**, **no shortage of teaching staff**, and **peer-to-peer tutoring.**

The second group consists of digitalisation-related indicators discussed in detail in Chapter 4:

- School capacity to enhance teaching and learning using digital resources is measured by **school preparedness for digital learning**, as principals in higher-performing systems tend to report they are prepared on this front.
- School-level digital policies such as **cell phone bans in school** and **subject-specific guidelines for the use of digital devices** are shown, as these policies are related to distraction in class.
- AI-related learning opportunities at school, such as **how often students undertake a task to assess AI-generated information in school lessons** is shown, as students who frequently have access to such learning opportunities and use AI for learning tend to achieve higher scores.

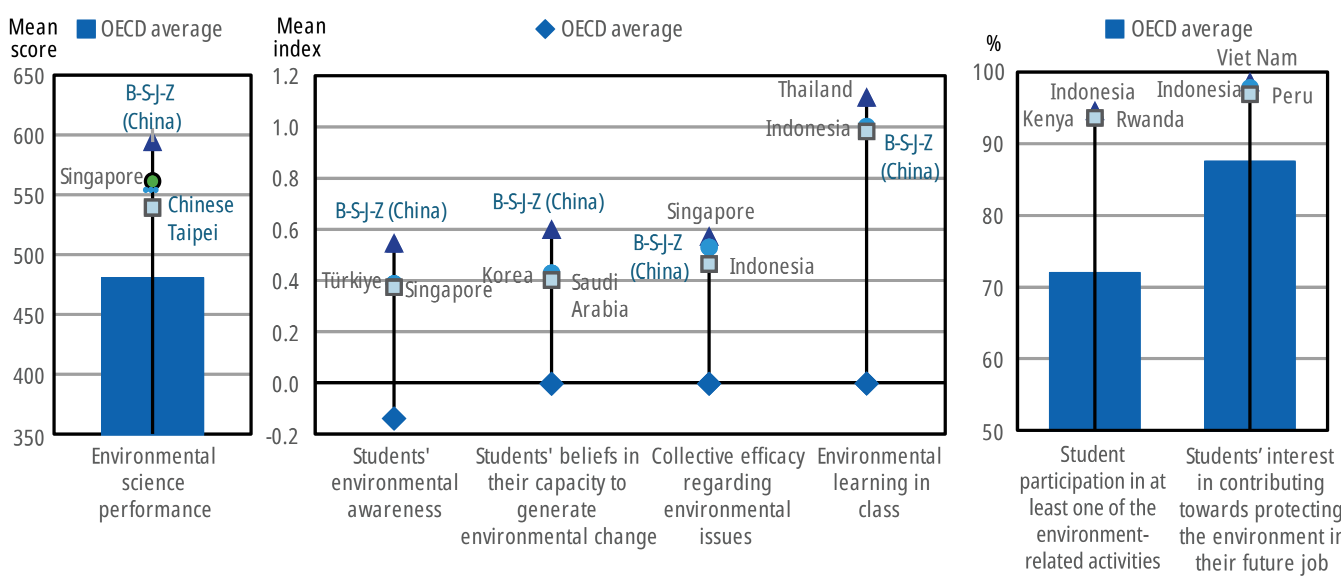
Student engagement in environmental challenges

Figure I.1.11 provides an overview of the key indicators discussed in Chapter 5. The first three are key components of environmental agency and the last one regards learning opportunities in school:

- Environmental knowledge and skills are measured by **student performance in environmental science**.
- Students' attitudes towards the environment cover **students' environmental awareness**, **their beliefs in their own capacity to generate environmental change**, and **their beliefs in collective efficacy regarding environmental issues**.
- Students' commitment to protecting the environment includes **student involvement in at least one of the environment-related activities** included in the questionnaire and **their interest in contributing towards protecting the environment in their future career**.
- Students' learning opportunities at school regarding environmental challenges are measured by **opportunities for environmental learning in class.**

Performance, attitudes and commitment are interrelated and go hand-in-hand. Furthermore, students who reported more frequent opportunities for learning how to address environmental challenges in class tend to have higher levels of performance, more positive attitudes and greater commitment. Despite the positive relationship between performance, attitudes and commitment, there is some proportion of students who care for the environment, but do not commit to protecting the environment. These students tend to have less frequent opportunities for environmental learning in class.

Figure I.1.11. Multiple dimensions of student engagement in environmental challenges



Source: OECD, PISA 2025 Database, Tables I.B1.5.1, I.B1.5.6, I.B1.5.11, I.B1.5.18, I.B1.5.33, I.B1.5.41 and I.B1.5.54. See https://stat.link/3r8tyd for the underlying data.

Box I.1.1. Students' perceptions of social mobility

Social mobility is essential to ensuring that all students can fulfil their potential. To capture students' beliefs about social mobility, PISA 2025 introduced a new item asking students whether they agreed with the statement: "Your status in society is something that you can't really change very much." Agreement with this statement reflects lower perception of social mobility, while disagreement indicates stronger beliefs in opportunities for social mobility.

Who perceives greater opportunities for social mobility?

On average across OECD countries, two out of three students disagreed or strongly disagreed that social status in society is something that cannot really change very much (Table I.B1.1.3). This varies across countries and economies, from less than 40% in Thailand, the Philippines and Indonesia, to around 75% or more in Portugal and Israel. Perhaps reassuringly, students perceive greater social mobility as the real social mobility in their societies increases, measured by the Global Social Mobility Index (World Economic Forum, 2020[1]), (see online Figure I.1.o3). However, students in some countries and economies, such as Indonesia, the Philippines, Thailand and Malaysia, appear to be particularly pessimistic when their perceived social mobility is compared against the observed mobility in their societies. On the other hand, students in Portugal, Israel, Romania, Georgia and Armenia perceive their societies to be more fluid than what would be expected according to the Global Social Mobility Index.

Socio-economically disadvantaged students are less likely than advantaged students to believe in the availability of opportunities for social mobility, on average and in a majority of countries and economies (Table I.B1.1.4). On average across OECD countries, this amounts to a 12 percentage-point difference. The gap is smallest in the Palestinian Authority and Malaysia (less than a 5 percentage-point difference), and greatest in Romania, Mauritius, Brunei Darussalam and Hong Kong (China) (at least an 18 percentage-point difference).

The share of boys and girls who believe in a more fluid social structure is similar across OECD countries and in nearly half of countries and economies (Table I.1.4). In other systems, the gender gap varies, with a greater share of boys reporting such beliefs in some education systems and girls in others.

How social mobility, growth mindset and academic resilience are interrelated

PISA 2025 findings show that students who perceive greater opportunities for social mobility are more likely to endorse a growth mindset, which in turn is associated with a higher likelihood of academic resilience. Academically resilient students also tend to perceive stronger prospects for social mobility (Figure I.1.12). Although these associations do not establish causal relationships, they suggest a mutually reinforcing set of beliefs and outcomes. From a policy perspective, this pattern underscores the potential value of education policies that strengthen students' perceptions of social mobility – such as promoting fairness, transparency and opportunity within education systems – alongside interventions that foster growth mindset.

- **Social mobility and growth mindset.** Students reporting a growth mindset are three times more likely to perceive opportunities for social mobility than students reporting a fixed mindset, on average across OECD countries and across all countries and economies (Table I.B1.1.5). This result remains unchanged even after accounting for students and schools' socio-economic profile. This gap in likelihood exceeds five times in the Philippines and Dushanbe (Tajikistan).[10]
- **Growth mindset and academic resilience.** Across OECD countries and in nearly all countries and economies, the majority of students who are academically resilient also report a growth mindset (Table I.B1.1.6). On average, nearly four out of five students who are academically resilient hold a growth mindset. Conversely, among students who are from disadvantaged socio-economic backgrounds and not among the top performers, around three out of five students report a growth mindset.

- **Academic resilience and social mobility.** The majority of students who are academically resilient hold beliefs in opportunities for social mobility, on average and in nearly all countries and economies (Table I.1.6). Across OECD countries, more than seven out of ten students who are academically resilient also perceive opportunities in social mobility. Among students who are from disadvantaged socio-economic backgrounds and not among the top performers, less than six out of ten students perceive opportunities in social mobility.

Figure I.1.12. Social mobility, growth mindset and academic resilience

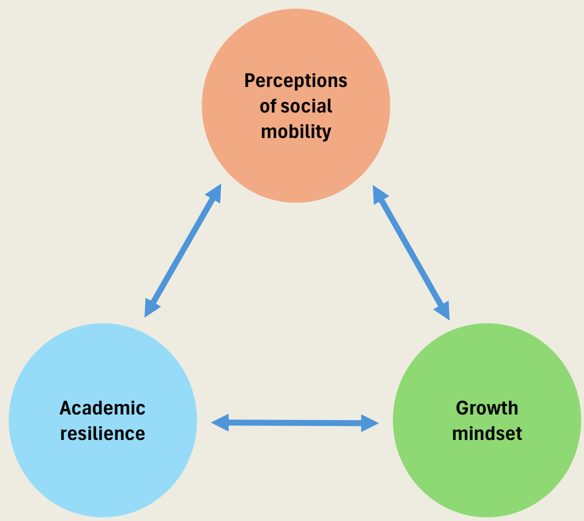


Table I.1.1. PISA 2025 figures in Chapter 1

Figure I.1.2		PISA 2025's multidimensional framework for competent learners
Figure I.1.3		Multiple dimensions of student learning
Figure I.1.4		Science performance and spending on education
Figure I.1.5		The global pool of future science innovators across 91 countries and economies
Figure I.1.6		Trends in performance over time in science, reading and mathematics
Figure I.1.7		Trends in low- and high- achievers over time in science, reading and mathematics
Figure I.1.8		Trends in student perceived engagement over time
Figure I.1.9		Competent, proficient and engaged learners
Figure I.1.10		Engaged learners and proficient learners
Figure I.1.11		Trends in reading performance and engagement
Figure I.1.12		Multiple dimensions of student engagement in environmental challenges
Figure I.1.o1	WEB	Social mobility, growth mindset and academic resilience
Figure I.1.o2	WEB	Students' perceived curiosity and spending on education
Figure I.1.o3	WEB	Students' perceived perseverance and spending on education

StatLink https://stat.link/3r8tyd

References

Rychen, D. and L. Salganik (eds.) (2003), *Key Competencies for a Successful Life and a Well-functioning Society*, Hogrefe & Huber. [2]

World Economic Forum (2020), *The Global Social Mobility Report 2020*, World Economic Forum, Cologny/Geneva, https://www3.weforum.org/docs/Global_Social_Mobility_Report.pdf. [1]

Notes

[1] The OECD Definition and Selection of Competencies (DeSeCo) framework defines competency as a multifaceted concept that brings together cognitive, socio-emotional and practical resources. These elements are combined and applied in context to respond effectively to complex demands (Rychen and Salganik, 2003[2]).

[2] Definitions: Values that are not reported as percentages correspond to mean values of the corresponding questionnaire indices. Percentages are defined as follows: Percentage of students scoring above a baseline level of proficiency: students scoring at or above Level 2 in science, reading and mathematics; at or above Level 3 in computational problem solving; Growth mindset: Percentage of students who disagree or strongly disagree with the statement "You have a certain amount of intelligence, and you really can't do much to change it"; Value of learning at school: Percentage of students who disagree or strongly disagree that "School has done little to prepare me for adult life when I leave school"; Absence of bullying: Percentage of students who reported never or almost never being victim of any type of bullying act (among a list of five different types of acts); Lack of truancy: Percentage of students who did not report that in the two weeks prior to the PISA test they had skipped at least one class or day of school; Academic resilience in science: Percentage of students from the bottom quarter of socio-economic status (disadvantaged students) who scored in the top quarter of performance amongst students in their own country/economy; Beliefs in social mobility: Percentage of students who disagree or strongly disagree with the statement "Your status in society is something that you can't really change very much"; No shortage of teaching staff: Percentage of students in schools whose principal reported that the school's capacity to provide instruction is not at all hindered by a lack of teaching staff; Peer-to-peer tutoring: Percentage of students in schools whose principal reported that peer-to-peer tutoring is provided; Learning to assess AI-generated content in class: Percentage of students who reported that, in their school lessons, they assess the quality of information generated by Artificial Intelligence chatbots (e.g. ChatGPT) sometimes, often or very often; School policy: cell phone bans in school: Percentage of students in schools whose principal reported that the use of cell phones is not allowed on the school premises; School policy: subject-specific guidelines on digital devices: Percentage of students in schools whose principal reported that the school has formal guidelines for the use of digital devices for teaching and learning in specific subjects.

[3] Computational problem solving was measured as a part of the PISA 2025 innovative domain, "learning in the digital world."

[4] Several cautions should be kept in mind when interpreting this figure. First, total expenditure on education across all types of institutions is measured as the sum of direct spending by both public and private institutions over the grades and education levels in which 6- to 15-year-olds are typically enrolled. However, it does not include costs

borne by families outside formal schooling, such as private tutoring or cram schools. Second, the cross-sectional relationship should not be interpreted as causal. The figure does not preclude the possibility that increased spending in countries already above the USD 85 000 per student threshold may be associated with improved performance, particularly when the additional resources are used effectively. Third, science performance represents only one of many education outcomes. While it is used here as a key proxy, it may not fully reflect all important dimensions of educational outcomes.

[5] The results need to be interpreted with caution, as students' responses may be influenced by differences in student response styles and cultural norms. Furthermore, the first and second cautions described in Note 2 are also relevant in this context.

[6] The indices of curiosity and perseverance are not comparable between PISA 2022 and PISA 2025. In 2022, a broader set of items was used to measure these constructs, whereas fewer items were included in 2025.

[7] This distinction is not intended to imply that they are mutually exclusive, oppositional or dichotomous, but rather to support a more nuanced understanding of how each contributes to the broader learning process. Furthermore, this section adopts a simplified approach to capturing overall engagement in order to examine its association with academic performance. However, it is important to recognise that engagement is inherently multi-faceted. These dimensions may vary in combination across students, with strengths in some areas potentially compensating for weaknesses in others, suggesting multiple pathways to becoming a competent learner.

[8] Proficient learners are operationally defined in this section as students who are at proficiency Level 2 or above in science, reading and mathematics as well as at proficiency Level 3 or above in computational problem solving.

[9] Engaged learners are operationally defined in this section as students who agreed or strongly agreed with the following three statements: "I like learning new things" (curiosity); "I apply additional effort when work becomes challenging" (perseverance); and "I ask for help when I have trouble learning" (help seeking); as well as reported to do the following often or very often: "I change my approach to studying if it is not successful" (goal setting).

[10] This positive relationship is observed at the system level as well. Countries and economies with more students reporting growth mindset tend to be the ones where more students believe in social mobility (r = 0.84) (Tables I.B1.1.3 and I.B1.3.17).

2 Student performance in PISA 2025

This chapter examines student performance in the PISA 2025 assessment in science, reading and mathematics, across participating countries and economies. It also reports student performance in computational problem solving. It explores variations in performance within and between countries and economies, and between schools and students.
The chapter also looks at variation in performance in PISA assessments over time, comparing 2022 and 2025 results as well as long-term trends over the past decade. Finally, the chapter explores PISA results related to two dimensions of equity in education – inclusion and fairness – in participating countries and economies.

What the data tell us

- B-S-J-Z (China) and Singapore were the two highest-performing systems across science, mathematics and reading in PISA 2025. B-S-J-Z (China) had the highest mean scores in science (597 points) and mathematics (612 points), while Singapore performed the highest in reading (535 points).
- Around three-quarters of students across OECD countries demonstrated at least baseline proficiency in science: rather than simply knowing about science, students use scientific knowledge in ways that demonstrate basic scientific literacy. However, relatively few (7%) reached the highest proficiency levels. In 11 systems, over 75% of students performed below Level 2, whereas 7 systems had less than 15% of students below baseline.
- In computational problem solving, students in B-S-J-Z (China), Macao (China) and Singapore had the highest mean scores (572, 563 and 560 mean score points, respectively). Around 26% of students across OECD countries reached the two highest proficiency levels (Levels 5 or 6), while 5% performed below Level 1.
- Average science performance remained broadly stable between 2022 and 2025, while declines in reading and mathematics continued. On average across 35 OECD countries, science performance did not change, while reading performance fell by about 14 score points and mathematics by 9 points.
- PISA 2025 recorded the lowest OECD-average performance observed so far in all three core domains. Reading performance declined after its peak around 2012, science declined more gradually over the past decade, and mathematics fell especially sharply after 2018.
- Between 2022 and 2025, the narrowing of socio-economic gaps largely reflected declines among advantaged students rather than improvements among disadvantaged students. In science, disadvantaged students' performance remained stable while advantaged students' performance declined by 8 points. In reading, disadvantaged students' performance declined by 4 points, compared with a 20-point decline among advantaged students. In mathematics, advantaged students' performance declined by 14 points, while the change among disadvantaged students was not statistically significant.
- Socio-economic background remains strongly associated with student achievement. On average across OECD countries, socio-economic status accounted for 12% of within-country variation in science performance; 37% of disadvantaged students were low performers in science, compared with 12% of advantaged students.
- Some education systems simultaneously demonstrate inclusion, socio-economic fairness and strong performance. Seven systems – B-S-J-Z (China), Canada*, Estonia, Ireland, Japan, Korea and Macao (China) – combined inclusion above 75%, less than 10% of science-performance variation associated with socio-economic status, and above-OECD-average performance.
- Science showed almost no gender gap in average performance scores, but this concealed contrasting patterns at opposite ends: girls performed 12 points higher among the lowest-achieving students, while boys performed 10 points higher among the highest-achieving students. Girls outperformed boys in reading by 30 points on average across OECD countries, while boys outperformed girls in mathematics by 13 points.
- On average across 29 OECD countries, 41% of immigrant students were socio-economically disadvantaged, compared with 21% of non-immigrant students, and 71% of first-generation immigrant students mainly spoke a language at home that differed from the assessment language. After accounting for socio-economic status and language spoken at home, immigrant students outperformed non-immigrant students in science in 13 systems, while the difference was not statistically significant in another 10 systems.

This chapter examines student performance in the PISA 2025 assessment. PISA measures student performance as the extent to which 15-year-old students have acquired the knowledge and competencies that are essential for full participation in modern societies. The first section reports the average performance in science, reading and mathematics, as well as computational problem solving[1], for each country and economy, comparing it with the performance of other countries and economies. It also explores variations in performance within and between countries and economies. The second section examines changes in performance between the 2022 and 2025 PISA assessments. It also discusses long-term trends in student performance in PISA stretching over a decade. The final section of this chapter covers two dimensions of equity in education – inclusion and fairness – and looks at changes over time among countries and economies that participated in PISA 2025 and in previous assessments.

Performance in science, reading, mathematics and computational problem solving

Average performance in science, reading and mathematics

In PISA 2025, students scored 482 points in science, on average across OECD countries (Table I.B1.2a.1). Students at this average score are at a proficiency level where they can use scientific ideas, evidence and representations to construct or evaluate explanations, simple models, investigations and conclusions when given appropriate support. They can also interpret simple data, identify strengths, limitations or flaws in models and research, and choose suitable methods or sources of evidence. They can justify their choices using relevant evidence and basic criteria for evaluating the credibility of sources (see the section: What students can do in science) (Table I.2.2).

Students in B-S-J-Z (China) (597 points) and Singapore (560 points) scored higher in science than students in all other countries/economies that participated in PISA 2025 (Table I.2.1). On average, these students are able to engage with broader and more demanding scientific ideas, more complex investigations and sources. They are expected not only to interpret or choose evidence, but also to evaluate claims, identify errors and describe flaws.

Science was the major domain in PISA 2025, but performance in mathematics and reading provides important additional context for comparing education systems across the core domains.

In mathematics, students scored 463 points on average across OECD countries. In B-S-J-Z (China), students performed the highest in mathematics (612 points), while the second-highest was achieved by students in Singapore (563 points). In reading, the ordering is reversed for students in Singapore, who had the highest mean performance (535 points), followed by B-S-J-Z (China) (527 points) – across OECD countries, students scored 461 points in reading, on average (Tables I.B1.2a.2 and I.B1.2a.3).

Table I.2.1, I.2.o1 (online) and I.2.o2 (online) show each country's/economy's average score and indicate which peer systems differ statistically significantly[2] from each other.

Table I.2.1. Comparing countries' and economies' performance in science

Mean score	Comparison country/economy	Countries and economies whose mean score is not statistically different from the comparison country's/economy's score
597	**B-S-J-Z (China)**	
560	**Singapore**	
541	**Macao (China)**	Chinese Taipei, Japan
540	**Chinese Taipei**	Macao (China), Japan
538	**Japan**	Macao (China), Chinese Taipei
527	**Estonia**	Korea
526	**Korea**	Estonia
511	**United Kingdom**	Canada*, New Zealand*, Australia, United States*
510	**Canada***	United Kingdom, New Zealand*, Australia, United States*
509	**New Zealand***	United Kingdom, Canada*, Australia, Finland, United States*
509	**Australia**	United Kingdom, Canada*, New Zealand*, Finland, United States*
504	**Finland**	New Zealand*, Australia, United States*, Switzerland, Ireland
502	**United States***	United Kingdom, Canada*, New Zealand*, Australia, Finland, Switzerland, Ireland, Austria, Hong Kong (China), Poland, Türkiye, Czechia, Belgium
501	**Switzerland**	Finland, United States*, Ireland, Austria, Hong Kong (China), Poland
500	**Ireland**	Finland, United States*, Switzerland, Austria, Hong Kong (China), Poland, Türkiye
497	**Austria**	United States*, Switzerland, Ireland, Hong Kong (China), Poland, Türkiye, Czechia, Belgium
496	**Hong Kong (China)**	United States*, Switzerland, Ireland, Austria, Poland, Türkiye, Czechia, Belgium
495	**Poland**	United States*, Switzerland, Ireland, Austria, Hong Kong (China), Türkiye, Czechia, Belgium
494	**Türkiye**	United States*, Ireland, Austria, Hong Kong (China), Poland, Czechia, Belgium
490	**Czechia**	United States*, Austria, Hong Kong (China), Poland, Türkiye, Belgium, Lithuania, Germany, Netherlands*, Sweden, France
490	**Belgium**	United States*, Austria, Hong Kong (China), Poland, Türkiye, Czechia, Lithuania, Germany, Netherlands*, Sweden, Slovenia, France, Italy, Portugal
488	**Lithuania**	Czechia, Belgium, Germany, Netherlands*, Sweden, Slovenia, France, Italy, Portugal
486	**Germany**	Czechia, Belgium, Lithuania, Netherlands*, Sweden, Slovenia, France, Italy, Portugal, Hungary, Denmark
485	**Netherlands***	Czechia, Belgium, Lithuania, Germany, Sweden, Slovenia, France, Italy, Portugal, Hungary
485	**Sweden**	Czechia, Belgium, Lithuania, Germany, Netherlands*, Slovenia, France, Italy, Portugal, Hungary
484	**Slovenia**	Belgium, Lithuania, Germany, Netherlands*, Sweden, France, Italy, Portugal, Hungary
483	**France**	Czechia, Belgium, Lithuania, Germany, Netherlands*, Sweden, Slovenia, Italy, Portugal, Hungary, Denmark, Spain, Croatia
483	**Italy**	Belgium, Lithuania, Germany, Netherlands*, Sweden, Slovenia, France, Portugal, Hungary, Denmark, Spain
482	**Portugal**	Belgium, Lithuania, Germany, Netherlands*, Sweden, Slovenia, France, Italy, Hungary, Denmark, Spain, Croatia, Slovak Republic
480	**Hungary**	Germany, Netherlands*, Sweden, Slovenia, France, Italy, Portugal, Denmark, Spain, Croatia, Slovak Republic
478	**Denmark**	Germany, France, Italy, Portugal, Hungary, Spain, Croatia, Slovak Republic, Luxembourg
477	**Spain**	France, Italy, Portugal, Hungary, Denmark, Croatia, Slovak Republic, Luxembourg
476	**Croatia**	France, Portugal, Hungary, Denmark, Spain, Slovak Republic, Luxembourg
475	**Slovak Republic**	Portugal, Hungary, Denmark, Spain, Croatia, Luxembourg, Norway*
474	**Luxembourg**	Denmark, Spain, Croatia, Slovak Republic, Norway*
470	**Norway***	Slovak Republic, Luxembourg, Latvia
468	**Latvia**	Norway*
458	**United Arab Emirates**	Viet Nam
457	**Viet Nam**	United Arab Emirates, Malta
453	**Malta**	Viet Nam, Ukrainian regions (17 of 27)
448	**Ukrainian regions (17 of 27)**	Malta, Uruguay, Chile, Israel
445	**Uruguay**	Ukrainian regions (17 of 27), Chile, Israel, Iceland, Mauritius
442	**Chile**	Ukrainian regions (17 of 27), Uruguay, Israel, Iceland, Brunei Darussalam, Mauritius, Uzbekistan
442	**Israel**	Ukrainian regions (17 of 27), Uruguay, Chile, Iceland, Brunei Darussalam, Mauritius, Uzbekistan, Montenegro, Albania*, Greece
441	**Iceland**	Uruguay, Chile, Israel, Brunei Darussalam, Mauritius, Uzbekistan
439	**Brunei Darussalam**	Chile, Israel, Iceland, Mauritius, Uzbekistan, Albania*, Greece
438	**Mauritius**	Uruguay, Chile, Israel, Iceland, Brunei Darussalam, Uzbekistan, Montenegro, Albania*, Qatar, Greece, Thailand, Serbia

Mean score	Comparison country/economy	Countries and economies whose mean score is not statistically different from the comparison country's/economy's score
438	Uzbekistan	Chile, Israel, Iceland, Brunei Darussalam, Mauritius, Montenegro, Albania*, Qatar, Greece, Thailand
435	Montenegro	Israel, Mauritius, Uzbekistan, Albania*, Qatar, Greece, Thailand, Serbia
435	Albania*	Israel, Brunei Darussalam, Mauritius, Uzbekistan, Montenegro, Qatar, Greece, Thailand, Serbia
434	Qatar	Mauritius, Uzbekistan, Montenegro, Albania*, Greece, Thailand, Serbia
434	Greece	Israel, Brunei Darussalam, Mauritius, Uzbekistan, Montenegro, Albania*, Qatar, Thailand, Serbia, Romania
432	Thailand	Mauritius, Uzbekistan, Montenegro, Albania*, Qatar, Greece, Serbia, Romania
429	Serbia	Mauritius, Montenegro, Albania*, Qatar, Greece, Thailand, Romania, Mongolia, Costa Rica, Georgia, Moldova, Bulgaria
425	Romania	Greece, Thailand, Serbia, Mongolia, Costa Rica, Georgia, Moldova, Bulgaria, Kazakhstan, Malaysia
424	Mongolia	Serbia, Romania, Costa Rica, Georgia, Moldova, Bulgaria, Kazakhstan, Malaysia
424	Costa Rica	Serbia, Romania, Mongolia, Georgia, Moldova, Bulgaria, Kazakhstan, Malaysia
422	Georgia	Serbia, Romania, Mongolia, Costa Rica, Moldova, Bulgaria, Kazakhstan, Malaysia
422	Moldova	Serbia, Romania, Mongolia, Costa Rica, Georgia, Bulgaria, Kazakhstan, Malaysia, Colombia
421	Bulgaria	Serbia, Romania, Mongolia, Costa Rica, Georgia, Moldova, Kazakhstan, Malaysia, Colombia, Mexico, Saudi Arabia
420	Kazakhstan	Romania, Mongolia, Costa Rica, Georgia, Moldova, Bulgaria, Malaysia, Colombia
419	Malaysia	Romania, Mongolia, Costa Rica, Georgia, Moldova, Bulgaria, Kazakhstan, Colombia, Mexico, Saudi Arabia
414	Colombia	Moldova, Bulgaria, Kazakhstan, Malaysia, Mexico, Saudi Arabia, Cyprus, Azerbaijan, Brazil, Jordan, Peru
414	Mexico	Bulgaria, Malaysia, Colombia, Saudi Arabia, Cyprus, Azerbaijan, Brazil
413	Saudi Arabia	Bulgaria, Malaysia, Colombia, Mexico, Cyprus, Azerbaijan, Brazil, Jordan
411	Cyprus	Colombia, Mexico, Saudi Arabia, Azerbaijan, Brazil, Jordan, Peru
409	Azerbaijan	Colombia, Mexico, Saudi Arabia, Cyprus, Brazil, Jordan, Peru
409	Brazil	Colombia, Mexico, Saudi Arabia, Cyprus, Azerbaijan, Jordan, Peru
407	Jordan	Colombia, Saudi Arabia, Cyprus, Azerbaijan, Brazil, Peru
406	Peru	Colombia, Cyprus, Azerbaijan, Brazil, Jordan
393	Ecuador	Argentina, Indonesia
393	Argentina	Ecuador, Indonesia
389	Indonesia	Ecuador, Argentina, El Salvador
385	El Salvador	Indonesia, Cambodia
382	Cambodia	El Salvador, North Macedonia
378	North Macedonia	Cambodia, Lebanon
373	Philippines	Lebanon, Armenia
372	Lebanon	North Macedonia, Philippines, Armenia
369	Armenia	Philippines, Lebanon
363	Kyrgyzstan	Dominican Republic, Palestinian Authority, Morocco
361	Dominican Republic	Kyrgyzstan, Palestinian Authority, Morocco, Kosovo, Paraguay
359	Palestinian Authority	Kyrgyzstan, Dominican Republic, Morocco, Kosovo, Paraguay, Zambia
358	Morocco	Kyrgyzstan, Dominican Republic, Palestinian Authority, Kosovo, Paraguay, Kurdistan Region (Iraq), Guatemala, Zambia
357	Kosovo	Dominican Republic, Palestinian Authority, Morocco, Paraguay, Zambia
355	Paraguay	Dominican Republic, Palestinian Authority, Morocco, Kosovo, Kurdistan Region (Iraq), Guatemala, Zambia
352	Kurdistan Region (Iraq)	Morocco, Paraguay, Guatemala, Zambia
351	Guatemala	Morocco, Paraguay, Kurdistan Region (Iraq), Zambia
337	Zambia	Palestinian Authority, Morocco, Kosovo, Paraguay, Kurdistan Region (Iraq), Guatemala, Kenya, Dushanbe (Tajikistan), Rwanda
335	Kenya	Zambia, Dushanbe (Tajikistan)
334	Dushanbe (Tajikistan)	Zambia, Kenya
317	Rwanda	Zambia

Significantly **above** the OECD average
Not statistically different from the OECD average
Significantly **below** the OECD average

Countries and economies are ranked in descending order of the mean performance in science.

Source: OECD, PISA 2025 Database, Table I.B1.2.1.

In PISA 2025, all countries and economies that performed above the OECD average in science also performed above the OECD average in mathematics and reading, with four exceptions. Belgium and Lithuania performed above the OECD average in science and mathematics but not statistically different from the OECD average in reading; while Türkiye and the United States* performed above the OECD average in science and reading but not statistically different from the OECD average in mathematics. In total, 18 countries and economies performed above the OECD average in science, mathematics and reading (Table I.2.1, I.2.o1 (online) and I.2.o2 (online)).

The distance between the highest- and lowest-performing systems provides a simple snapshot of the global range of student achievement in PISA 2025. Although purely descriptive, it helps locate each system within the broader international distribution and illustrates the scale of performance differences observed across education systems.

The gap in performance between the highest- and lowest-performing countries is 124 score points in science among OECD countries and 280 points among all education systems that took part in PISA 2025 (Table I.B1.2a.1). In reading, the performance gap between the highest- and lowest-performing countries is 103 score points among OECD countries and 234 score points among all education systems that took part in PISA 2025 (Table I.B1.2a.2). In mathematics, the corresponding gap is 145 score points among OECD countries and 301 score points among all education systems that took part in PISA 2025 (Table I.B1.2a.3).

Finally, Box I.2.2 reports estimates suggesting that students around age 15 typically gain about 20 score points over one year of schooling, i.e. this number of points could be considered to be equivalent to one school year of learning. This benchmark provides useful context when assessing changes in performance over time, but it should be interpreted cautiously and not applied mechanically to cross-country differences in mean scores.

Variation in performance within countries

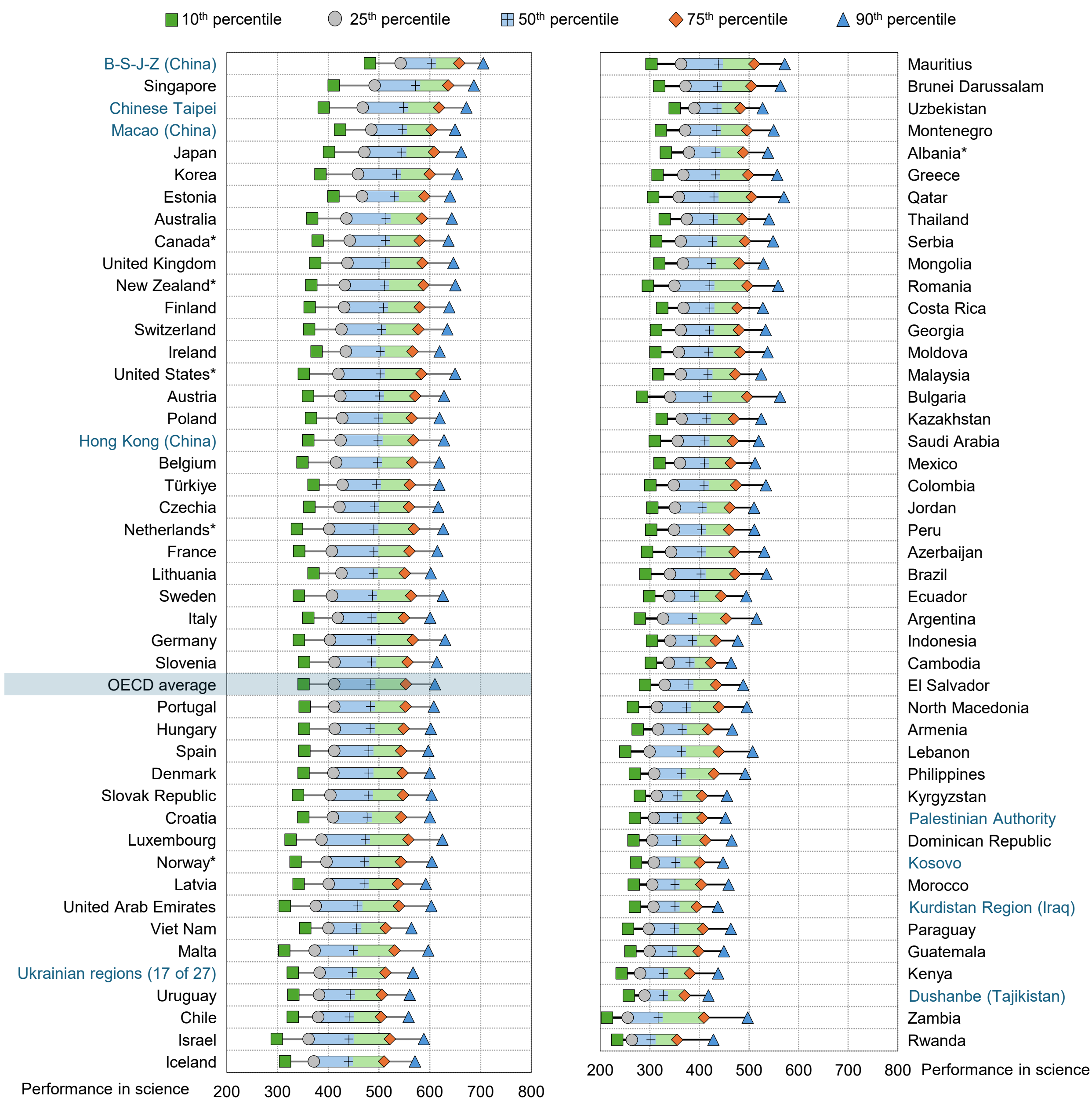
Variation in student performance, as measured by the standard deviation of scores, tends to be greater among high-performing than low-performing education systems. There is a strong correlation between average performance in science and variation in performance in science (see Figure I.2.o1 (online)). For example, Cambodia has the smallest variation in science proficiency (63 score points) while several other countries and economies whose mean performance was below the OECD average also have small variations in performance[3] (Table I.B1.2a.1). However, this pattern does not hold in all cases. Among countries/economies that performed above the OECD average, B-S-J-Z (China), Estonia, Lithuania and Macao (China) stand out for their comparatively small variation in performance (standard deviation under 90 score points). Similarly, among countries that performed below the OECD average, Bulgaria, Israel, Luxembourg, Malta, the United Arab Emirates and Zambia stand out for their relatively large variation in performance (standard deviation greater than 105 score points).

Another measure of variation in performance within countries is the score gap that separates the highest- and lowest-performing students within a country (i.e. inter-decile range). In science, the difference between the 90th percentile of performance (the score above which only 10% of students scored) and the 10th percentile of performance (the score below which only 10% of students scored) is about 237 score points in all participating countries and economies, and 258 score points on average across OECD countries (Table I.B1.2a.1).

The largest differences between high- and low-achieving students in science are found in Luxembourg and the United States* (Figure I.2.1 and Figure I.2.o1 (online)). In these countries, the inter-decile range is over 290 score points, indicating that student performance in science is highly unequal among 15-year-old students. By contrast, the smallest differences between high- and low-achieving students are often found among countries and economies with low mean performance (i.e. lower than 410 points), as in Cambodia, Dushanbe (Tajikistan), Indonesia, Kosovo and the Kurdistan Region (Iraq). In these countries, the 90th percentile of the science distribution is below the OECD average score (Table I.B1.2a.1). In some lower-performing systems, smaller differences between high- and low-achieving students may reflect a compressed performance distribution, in which relatively few students reach high levels of proficiency and even the 90th percentile remains below the OECD average.

Figure I.2.1. Distribution of science performance

Mean score in science at the 10th, 25th, 50th, 75th and 90th percentiles of performance distribution



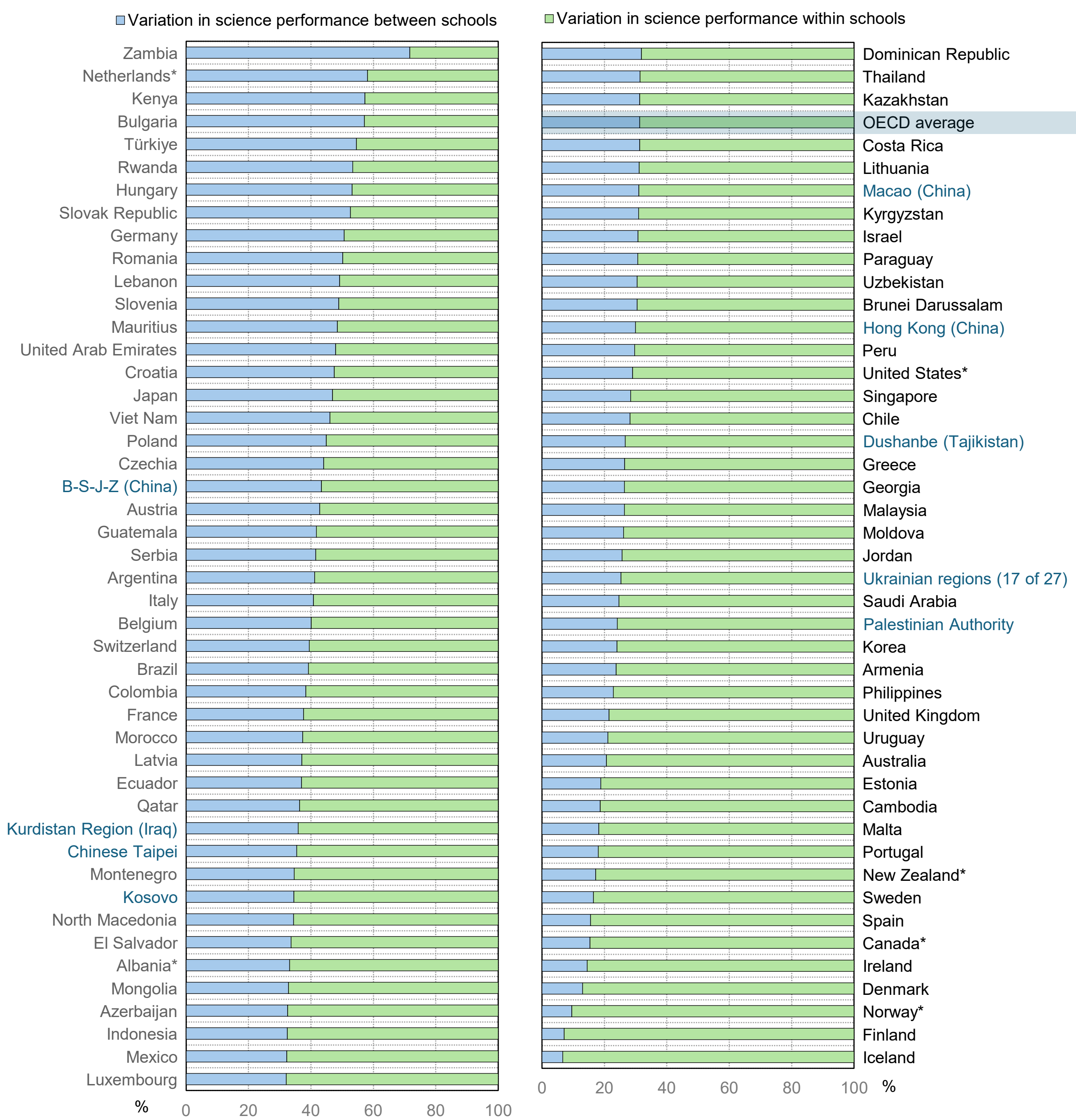
Notes: All differences between the 90th and the 10th percentiles are statistically significant (see Annex A3).
Countries and economies are ranked in descending order of the performance in science at the 50th percentile.
Source: OECD, PISA 2025 Database, Table I.B1.2a.1. See https://stat.link/xgs41b for the underlying data.

Performance differences among schools and students

Examining variation in performance between and within schools is important, because it shows whether performance gaps are mainly structured by school attendance or are predominantly found among students within the same school. When a large share of variation lies between schools, students' outcomes differ substantially depending on the school they attend. When most variation lies within schools, differences in performance are found mainly among students attending the same school. This distinction helps identify whether policy efforts need to focus primarily on differences between schools, differences among students within schools, or both.

Figure I.2.2. Variation in science performance between and within schools

Percentage of variation in science performance between and within schools



Notes: This figure is restricted to schools with the modal ISCED level for 15-year-old students.
Countries and economies are ranked in descending order of the variation in science performance between schools.
Source: OECD, PISA 2025 Database, Table I.B1.2a.25. See https://stat.link/xgs41b for the underlying data.

Out of the variation observed within countries in PISA 2025, 31% of the OECD-average variation in science performance is between schools (Figure I.2.2); while 69% is within schools. This means that, on average and in most countries/economies, school characteristics may play a less dominant role in explaining differences in student performance than student-level and classroom-level characteristics. These could include students' background, dispositions and learning behaviours, as well as differences associated with grade level, student grouping within the same school.

However, the extent of between-school variation in science performance differs widely across countries and economies. In three countries and economies, between-school differences account for less than 10% of the total variation in performance (Iceland, Finland and Norway*, in ascending order). By contrast, in ten other countries (Zambia, the Netherlands*, Kenya, Bulgaria, Türkiye, Rwanda, Hungary, the Slovak Republic, Germany and G710Romania, in descending order), differences between schools account for at least 50% of the total variation in the system's performance. This suggests that education systems in the latter group are more academically segmented, with high- and low-performing students more likely to be concentrated in different schools.

What students can do in science

PISA defines a scientifically educated person as someone who can engage in reasoned discourse about science, sustainability and technology to inform action (OECD, 2023[1]). Such an individual is educated to be an informed, critical user of scientific knowledge throughout their life, without necessarily becoming a producer of scientific knowledge. Such individuals possess an understanding of major scientific concepts, the standard practices of scientists, the degree to which scientific claims are justified, and the social mechanisms that make scientific knowledge trustworthy. This empowers them to evaluate the credibility of scientific information, make informed personal decisions, and play a role in societal choices impacting the environment.

To successfully demonstrate these competencies, three distinguishable but related forms of knowledge are required:

- **Content knowledge:** An understanding of the scientifically established facts, concepts, ideas and major explanatory theories about the natural and material world.
- **Procedural knowledge:** A familiarity with the standard procedures and practices that scientists use to obtain reliable and valid data. This involves familiarity with the concepts underlying empirical enquiry, such as identifying variables, repeating measurements to minimise uncertainty, and knowing how to appropriately represent and communicate data.
- **Epistemic knowledge:** An understanding of how scientific claims are justified and the rationale behind the procedures scientists use. This requires grasping the role of observations, models, theories and arguments, as well as understanding the collaborative nature of science, the importance of peer review, and how scientific consensus establishes trustworthy knowledge.

A scientifically educated person applies their knowledge in real-world personal, local or global contexts. For such application, PISA identifies three specific competencies (see Box I.2.1):

- **Explain phenomena scientifically:** The ability to recognise, construct and evaluate explanations and models for natural and technological phenomena.
- **Construct and evaluate designs for scientific enquiry and interpret scientific data and evidence critically:** The ability to appraise how questions are investigated scientifically and to critically interpret data.
- **Research, evaluate and use scientific information for decision making and action:** The ability to find information, evaluate its credibility and potential flaws, and use it to inform decisions.

To assess how scientifically educated 15-year-old students are, the PISA 2025 science assessment scale is divided into descriptive proficiency levels, ranging from Level 6 (the highest) down to Level 1b (the lowest). Table I.2.2 illustrates the range of science competencies covered by the proficiency levels and describes the skills, knowledge and understanding required at each aggregated level (the full science proficiency descriptors for PISA 2025 are included in Table I.2.o7 (online), in Table I.2.o8 (online) for reading and in Table I.2.o9 (online) for mathematics).

Table I.2.2. Description of the aggregated levels of science proficiency in PISA 2025

Level	Lower score limit	Percentage of students able to perform tasks at each aggregated level (OECD average)	Summary	Description
6	708	7.2%	Students display a high level of performance in all three competencies demonstrated by an ability to build explanations, critique methods and evidence, handle complex information, and justify decisions.in uncertain or unfamiliar contexts.	Students in this group can use scientific ideas that include theories, models, complex data and multiple sources of information. They can construct and evaluate explanations, make predictions, identify strengths and limitations of models, evaluate alternative designs for enquiry, interpret more advanced data representations, detect flawed interpretations, assess the credibility of sources, and justify decisions using scientific, procedural and epistemic knowledge, and appraise social, ethical or economic considerations. At Level 6, they can do this in unfamiliar contexts and consider implications for society.
5	633			
4	559	67.1%	Students can use science in practical ways like to explain everyday phenomena, read evidence, judge simple claims and sources, and make basic evidence-informed decisions using relevant and credible information.	Students in this group move from basic recognition to active use of scientific knowledge and evidence. At Level 2, they can distinguish scientific from non-scientific explanations, give simple explanations of familiar phenomena, interpret straightforward data, identify evidence supporting a claim, and use a single criterion to judge whether a source is credible. At Levels 3 and 4, they can do this for more advanced tasks requiring more justification: they can evaluate explanations or models, interpret graphical or tabular data, identify flaws in interpretations, justify simple research designs, compare sources, and assess whether evidence supports a claim.
3	484			
2	410			
1a	335	24.6%	Students can often spot the right science idea when it is simple and familiar, but they are not yet reliably using science to explain, evaluate evidence, or support decisions.	Students in this group can deal with simple, familiar, everyday science situations, especially when the task is concrete and the options are limited. They may be able to recognise a basic scientific explanation, choose a simple experimental design, select a relevant source of evidence, or identify one piece of evidence needed to support action. However, their reasoning is generally limited to low-demand tasks. They are not yet consistently able to explain phenomena, interpret evidence, judge credibility, or use scientific knowledge independently in a broader way.
1b	261			

Source: OECD, PISA 2025 Database, Table I.B1.2a.10.

In PISA, proficiency Level 2 is considered the baseline level of proficiency students need to participate meaningfully in society. Level 2 is regarded as the baseline level of proficiency because it marks the point at which students use scientific knowledge in ways that demonstrate scientific literacy: they pass from knowing some science to using science at a basic level.

Below this level, students may demonstrate some familiarity with scientific ideas or recognise simple information in familiar contexts. At Level 2, however, students are expected to go further: they can use scientific knowledge to provide simple explanations of everyday phenomena, evaluate basic aspects of scientific enquiry, and identify relevant information or evidence to support a conclusion, as well as justify its use. In this sense, Level 2 represents a shift from knowing to using science, even if at a basic level. It provides a meaningful reference point for assessing whether students can apply scientific knowledge to explain, interpret and evaluate straightforward situations. More specifically, at Level 2, students can use science to:

- Distinguish an appropriate scientific explanation from a non-scientific one.
- Give a simple scientific explanation of an everyday phenomenon.
- Evaluate simple enquiry designs.
- Interpret simple data relationships, including outliers.

- Identify evidence in a graph or table that supports a claim.
- Select a relevant information source for a science-related decision.
- Judge source credibility using a basic scientific criterion, such as expertise, scientific consensus or basic science.

Level 2 is the point at which students are beginning to use science as a tool for reasoning: explaining, interpreting, evaluating and making decisions in familiar real-world situations. The baseline is therefore meaningful because it represents a threshold of functional science literacy.

Students who do not attain baseline Level 2 are referred to in this report as "low performers". Low-performing students are at greater risk of having weaker mastery of the foundational skills needed for further learning and meaningful participation in society, placing them at greater risk of adverse educational and labour-market outcomes later in life (OECD, 2016[2]; OECD, 2023[3]; OECD, 2025[4]).

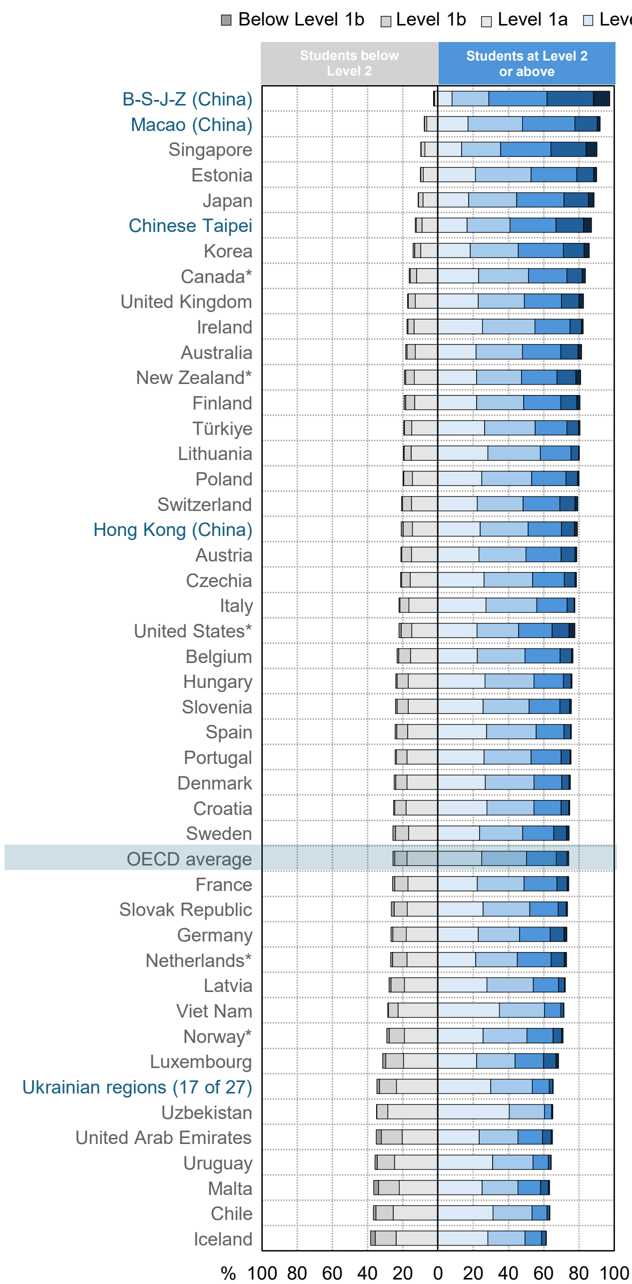
As shown in Figure I.2.3, on average across OECD countries, 74% of students scored at Level 2 or above in science proficiency. In 16 countries and economies, at least 80% of students scored at Level 2 or above.

The proportion of top-performing students indicates how successful systems are in not only securing basic skills for the majority, but also in nurturing advanced proficiency. Some 7% of students attained the highest proficiency levels, Level 5 or 6, in science on average across OECD countries. In 14 countries/economies, the share of top performers in science was over 10%.

On average across OECD countries, 26% of students did not reach the baseline proficiency Level 2 in science (Table I.B1.2a.10). In seven countries and economies, less than 15% of students performed below baseline proficiency (B-S-J-Z (China), Macao (China), Singapore, Estonia, Japan, Chinese Taipei and Korea, in ascending order of the proportion of low performers). In these seven systems, most of the relatively few low-performing students scored at Level 1a, the highest proficiency level below baseline, meaning that few students performed far below the baseline in science. Over 75% of students performed below baseline proficiency in 11 systems; among them, over 10% of students performed below Level 1b in Dushanbe (Tajikistan), Kenya, Paraguay, Rwanda and Zambia. The share of students below Level 1b also exceeded 10% in Lebanon, although fewer than 75% of students in that system performed below baseline proficiency overall.

These results show that mean performance and distribution across proficiency levels provide complementary information about the quality and inclusiveness of education systems. A system may perform well on average because many students reach high levels of proficiency, because few students fall below baseline expectations, or both. Conversely, lower mean performance often coincides with a larger concentration of students below Level 2, indicating that weak overall performance is closely linked to difficulties in ensuring that a broad majority of students acquire foundational scientific competencies.

Figure I.2.3. Students' proficiency in science



Notes: Cambodia, Dushanbe (Tajikistan), the Kurdistan Region (Iraq), Mauritius, Rwanda and Zambia used a paper-based version of the PISA assessment (see Annex A5).

Countries and economies are ranked in descending order of the percentage of students who performed at or above Level 2.

Source: OECD, PISA 2025 Database, Table I.B1.2a.10. See https://stat.link/xgs41b for the underlying data.

Box I.2.1. Comparing countries and economies on the three science competency subscales

Each item in the PISA 2025 science assessment was classified into one of the three science competency subscales:

- **Explain phenomena scientifically:** The ability to recognise, construct and evaluate explanations and models for natural and technological phenomena.
- **Construct and evaluate designs for scientific enquiry and critically interpret scientific data and evidence:** The ability to appraise how questions are investigated scientifically and to critically interpret data, assessing its reliability and limitations and synthesising findings.
- **Research, evaluate and use scientific information for decision making and action:** The ability to find information, evaluate its credibility and potential flaws, and use it to inform decisions.

The relative strengths and weaknesses of each country's/economy's education system are analysed by looking at differences in mean performance across the PISA science competency subscales. This gives a more refined indication of the aspects of scientific literacy in which each system stands out more, or less, relative to other participating systems.

On average across the OECD, students' relative scores are more favourable in explaining phenomena scientifically and in researching, evaluating and using scientific information for decision making and action than they are in constructing and evaluating designs for scientific enquiry (Table I.2.3). This means that, compared with other participating systems, OECD countries tend to have a more favourable position in the first and third subscales than in the second.

Across all participating systems, the picture is mixed. In the largest group of systems (23), students perform relatively better in researching, evaluating and using scientific information for decision making and action than in the other two subscales. However, this is only slightly better than explaining phenomena scientifically, which is the strongest competency in 22 systems. Constructing and evaluating designs for scientific enquiry is least often the strongest area, but only by a small margin, occurring in 18 systems. Only in Korea and the United Arab Emirates do students perform equally across the three subscales. These results should not be read as showing that one science competency is generally stronger or weaker than the others in an absolute sense. They show, instead, where each system stands out most when its performance on each subscale is compared with that of other participating systems.

A closer look at the 14 highest-performing systems in science (i.e. those with mean scores of 500 points or above) shows that the profile of relative strengths also varies within this group. In B-S-J-Z (China), Estonia and Macao (China), the strongest competency is constructing and evaluating designs for scientific enquiry, compared with the other two subscales. This same competency ranks second in Japan and Chinese Taipei, indicating a profile that differs from that observed in most other high-performing systems. In half of these systems (7 out of 14), the strongest competency is instead researching, evaluating and using scientific information for decision making and action; this subscale ranks second in a further three systems. By contrast, explaining phenomena scientifically is the strongest relative area only in Japan and Chinese Taipei, although it ranks second in seven of the highest-performing systems.

Overall, these PISA 2025 results show that countries and economies differ in the profile of science competencies they display, even when they achieve similar overall levels of performance. More generally, no single subscale emerges as the strongest competency in a clearly dominant number of systems. Rather, education systems differ in the aspect of scientific literacy in which they stand out most compared with other participating systems.

At the same time, these findings should be interpreted with caution. They describe differences across subscales within each system, not large absolute gaps in competence. A subscale that ranks lower within a country or economy may still reflect strong performance in absolute terms, particularly among the highest-performing systems. Even so, the subscale results add nuance to the interpretation of overall science performance by showing that similar mean scores may mask different internal profiles of strength across the three dimensions of scientific literacy.

Table I.2.3. Comparing countries and economies on the science competency subscales

	Mean performance in science (overall science scale)	Mean performance in each science subscale			Relative strengths in science: Standardised mean performance on the science subscale ...[1]		
		Explain Phenomena Scientifically	Evaluate Designs for Scientific Enquiry	Evaluate Scientific Information for Decision Making	... Explain Phenomena Scientifically (eps) is higher than ...	... Evaluate Designs for Scientific Enquiry (ede) is higher than ...	... Evaluate Scientific Information for Decision Making (eid) is higher than ...
B-S-J-Z (China)	597	595	600	596		eps eid	eps
Singapore	560	559	557	566			eps ede
Macao (China)	541	539	544	534	eid	eps eid	
Chinese Taipei	540	544	540	528	ede eid	eid	
Japan	538	542	538	534	ede eid	eid	
Estonia	527	521	530	528		eps eid	eps
Korea	526	525	525	525			
United Kingdom	511	512	508	515	ede		eps ede
Canada*	510	512	506	512	ede		eps ede
New Zealand*	509	509	506	513	ede		eps ede
Australia	509	511	504	515	ede		eps ede
Finland	504	507	500	507	ede		eps ede
United States*	502	500	495	509	ede		eps ede
Switzerland	501	500	501	500			eps
Ireland	500	502	497	501	ede		ede
Austria	497	494	498	496		eps	eps
Hong Kong (China)	496	490	497	497		eps	eps ede
Poland	495	496	495	490	eid	eid	
Türkiye	494	492	497	487	eid	eps eid	
Czechia	490	490	492	484	eid	eps eid	
Belgium	490	481	493	496		eps	eps ede
Lithuania	488	492	487	479	ede eid	eid	
Germany	486	485	486	486			eps
Netherlands*	485	482	486	491		eps	eps ede
Sweden	485	485	482	488	ede		eps ede
Slovenia	484	488	483	475	ede eid	eid	
France	483	481	483	487		eps	eps ede
Italy	483	481	484	479		eps eid	
OECD average	482	482	481	480	ede		eps ede
Portugal	482	483	482	477	eid	eid	
Hungary	480	483	480	469	ede eid	eid	
Denmark	478	479	476	470	ede eid	eid	
Spain	477	475	477	478		eps	eps ede
Croatia	476	479	475	466	ede eid	eid	
Slovak Republic	475	475	476	466	eid	eps eid	
Luxembourg	474	468	476	476		eps	eps ede
Norway*	470	473	470	464	ede eid	eid	
Latvia	468	465	469	467		eps	eps
United Arab Emirates	458	457	459	455			
Viet Nam	457	460	457	451	ede eid	eid	
Malta	453	456	449	453	ede eid		ede
Ukrainian regions (17 of 27)	448	455	443	443	ede eid		ede
Uruguay	445	445	442	446	ede		eps ede
Chile	442	442	441	440	ede		
Israel	442	441	441	444			eps ede
Iceland	441	437	446	425	eid	eps eid	
Brunei Darussalam	439	437	442	432	eid	eps eid	

Uzbekistan	438	439	436	434	ede eid		
Montenegro	435	437	434	428	ede eid	eid	
Albania*	435	439	432	425	ede eid	eid	
Qatar	434	435	433	438	ede		eps ede
Greece	434	430	434	438		eps	eps ede
Thailand	432	428	434	429		eps eid	eps
Serbia	429	433	429	414	ede eid	eid	
Romania	425	422	426	422		eps	eps
Mongolia	424	425	421	421	ede eid		ede
Costa Rica	424	426	422	425	ede		ede
Georgia	422	421	423	413	eid	eid	
Moldova	422	421	423	413	eid	eid	
Bulgaria	421	420	422	413	eid	eid	
Kazakhstan	420	415	421	416		eps eid	eps
Malaysia	419	419	420	415	eid		
Colombia	414	416	413	407	ede eid	eid	
Mexico	414	419	408	413	ede eid		ede
Saudi Arabia	413	414	411	419	ede		eps ede
Cyprus	411	404	415	412		eps	eps
Azerbaijan	409	405	409	402		eps eid	
Brazil	409	410	407	405	ede eid		ede
Jordan	407	407	407	404	ede		ede
Peru	406	402	407	403		eps	eps
Ecuador	393	392	395	389		eid	
Argentina	393	396	386	398	ede		eps ede
Indonesia	389	384	394	380	eid	eps eid	
El Salvador	385	386	382	381	ede eid		ede
North Macedonia	378	379	377	372	ede eid		
Philippines	373	362	382	375		eps eid	eps
Lebanon	372	360	382	367		eps eid	eps
Armenia	369	372	362	364	ede eid		ede
Kyrgyzstan	363	356	370	353		eps eid	
Dominican Republic	361	356	361	367		eps	eps ede
Palestinian Authority	359	355	360	359		eps	eps ede
Morocco	358	343	369	357		eps eid	eps
Kosovo	357	356	357	353	ede		ede
Paraguay	355	353	355	360	ede		eps ede
Guatemala	351	353	349	351	ede		ede
Kenya	335	333	340	319	eid	eps eid	

1. Relative strengths that are statistically significant are highlighted in a darker tone; empty cells indicate cases where the standardised subscale score is not significantly higher compared to other subscales, including cases in which it is lower. A country/economy is relatively stronger in one subscale than another if its standardised score, as determined by the mean and standard deviation of student performance in that subscale across all participating countries/economies, is significantly higher in the first subscale than in the second subscale. Science competency subscales are indicated by the following abbreviations: eps - explain phenomena scientifically; ede - evaluate designs for scientific enquiry; eid - evaluate scientific information for decision making.
Only countries and economies where PISA 2025 was delivered on computer are shown. Countries/economies that have implemented the paper-based test do not have enough cognitive data to compute these subscales.
Although the OECD mean is shown in this table, the standardisation of subscale scores was performed according to the mean and standard deviation of students across all PISA-participating countries/economies.
The standardised scores that were used to determine the relative strengths of each country/economy are not shown in this table.
Countries and economies are ranked in descending order of mean science performance.

Computational problem solving

In PISA 2025, a novel assessment was included to test computational problem solving. It focuses on students' capacity to engage in an iterative and self-regulated process of knowledge building and problem solving using computational tools and practices. Students complete two extended test units, during which they solve increasingly complex tasks and have access to learning resources such as tutorials, feedback and examples.

Students' performance on the computational problem-solving scale describes the extent to which students can solve problems using computational tools, such as modelling or programming tools, and through computational practices, such as conducting experiments, analysing data, and building and debugging computational artefacts. Students' performance on the test is supported by self-regulated learning, which includes how they maintain their motivation and task engagement, monitor their progress and adapt their strategies, and evaluate their own performance. A student's ability to succeed in the digital world is greatly influenced by their self-regulated learning competencies, i.e. how they manage their own learning, and, crucially, whether they can maintain their motivation and stay engaged with a task, even when it becomes challenging or frustrating.[4]

In computational problem solving, the average score among OECD countries is 500 score points (Table I.B1.2a.4). The highest-performing education systems are Macao (China), Singapore, B-S-J-Z (China), Japan, Chinese Taipei and Hong Kong (China) (in descending order and all above 545 score points). Australia, Estonia, Japan, Korea and New Zealand* are the top OECD countries (above 530 score points) (Table I.2.4). In addition to these ten countries and economies, another 15 education systems also performed above the OECD average in computational problem solving, ranging from Canada* (mean score of 525 points) to Luxembourg (mean score of 506 points).

Systems that consistently perform above the OECD average across assessment domains can be considered to demonstrate broad-based achievement. Consistent with the pattern observed earlier for science, mathematics and reading, almost all countries and economies that performed above the OECD average in computational problem-solving also performed above the OECD average in science, except for Denmark, Latvia, Luxembourg and the Netherlands*. Similarly, all countries and economies that performed above the OECD average in computational problem solving also performed above the OECD average in mathematics and reading, except for Latvia and Luxembourg, and except in reading only for Belgium, Denmark, Lithuania and the Netherlands*, and the United States* for mathematics only (Table I.2.1, I.2.o1 (online), I.2.o2 (online) and Table I.2.4).

Finally, to assess 15-year-old students' computational problem-solving skills, the PISA 2025 assessment scale is divided into descriptive proficiency levels, ranging from Level 6 (the highest) down to below Level 1 (the lowest). The main assessment scale represents students' overall computational problem-solving ability and reflects progress in both block-based programming and computer modelling. More specifically, it looks at whether students can carry out practical actions such as conducting systematic experiments, analysing the resulting data, and building or debugging their digital creations (the full computational problem-solving proficiency descriptors for PISA 2025 are included in Table I.2.o10 (online)).

Students performing below Level 1 are still largely exploring the software interface in a rudimentary way, rather than working towards a specific goal. Once they reach Level 1, they begin to interact with these tools at a surface level. They may make minor modifications to simple programs or adjust a single input in a basic model to observe what happens. This is still a relatively elementary form of manipulation of the digital environment.

At Levels 2 and 3, students begin to make more meaningful progress. At Level 2, they start to use simple operations, such as instructing a program to repeat an action, and begin testing out ideas. By Level 3, they combine a wider range of commands to build functional programs. At this level, students also begin to conduct basic, controlled experiments in order to infer simple relationships between different factors in a model. Although there is no formal baseline proficiency threshold on this scale, Level 3 can be regarded as a useful benchmark, as it marks the point at which students begin to demonstrate sufficiently solid knowledge and skills to progress more rapidly.

At Level 4, students are able to build moderately complex programs and models. They begin to exploit repeated patterns in their code, even if their solutions may still contain minor bugs or inefficiencies. Levels 5 and 6 can be considered the range of top performers. By Level 5, programming and modelling are relatively sophisticated, while Level 6 represents highly developed proficiency. Students at this level are efficient computational problem solvers who can produce optimal, problem-free programs without unnecessary redundancy.

Across OECD countries, about one-quarter of students can be considered top performers in computational problem solving (26%). A further 21% reach Level 4 and 17% reach Level 3, while 13% perform at Level 2 and 17% at Level 1. Only 5% perform below Level 1 (Table I.B1.2a.13).

Table I.2.4. Comparing countries' and economies' performance in computational problem solving

Mean score	Comparison country/economy	Countries and economies whose mean score is not statistically different from the comparison country's/economy's score
572	Macao (China)	
563	Singapore	B-S-J-Z (China), Japan
560	B-S-J-Z (China)	Singapore, Japan
557	Japan	Singapore, B-S-J-Z (China), Chinese Taipei
551	Chinese Taipei	Japan, Hong Kong (China)
545	Hong Kong (China)	Chinese Taipei, Estonia
541	Estonia	Hong Kong (China), Korea
538	Korea	Estonia, Australia
532	Australia	Korea, New Zealand*
531	New Zealand*	Australia
525	Canada*	United Kingdom, Switzerland
523	United Kingdom	Canada*, Switzerland, United States*
520	Switzerland	Canada*, United Kingdom, Czechia, United States*
517	Czechia	Switzerland, United States*, Lithuania, Ireland
513	United States*	United Kingdom, Switzerland, Czechia, Lithuania, Ireland, Austria, Belgium, Latvia, Poland, Finland, Netherlands*, Denmark, Luxembourg, Sweden
512	Lithuania	Czechia, United States*, Ireland, Austria, Belgium, Poland, Finland, Netherlands*
511	Ireland	Czechia, United States*, Lithuania, Austria, Belgium, Latvia, Poland, Finland, Netherlands*
509	Austria	United States*, Lithuania, Ireland, Belgium, Latvia, Poland, Finland, Netherlands*, Denmark, Luxembourg
508	Belgium	United States*, Lithuania, Ireland, Austria, Latvia, Poland, Finland, Netherlands*, Denmark, Luxembourg, Sweden, Portugal
507	Latvia	United States*, Ireland, Austria, Belgium, Poland, Finland, Netherlands*, Denmark, Luxembourg, Sweden, Portugal
507	Poland	United States*, Lithuania, Ireland, Austria, Belgium, Latvia, Finland, Netherlands*, Denmark, Luxembourg, Sweden, Portugal
507	Finland	United States*, Lithuania, Ireland, Austria, Belgium, Latvia, Poland, Netherlands*, Denmark, Luxembourg, Sweden, Portugal
506	Netherlands*	United States*, Lithuania, Ireland, Austria, Belgium, Latvia, Poland, Finland, Denmark, Luxembourg, Sweden, Portugal
506	Denmark	United States*, Austria, Belgium, Latvia, Poland, Finland, Netherlands*, Luxembourg, Sweden, Portugal
506	Luxembourg	United States*, Austria, Belgium, Latvia, Poland, Finland, Netherlands*, Denmark, Sweden, Portugal
503	Sweden	United States*, Belgium, Latvia, Poland, Finland, Netherlands*, Denmark, Luxembourg, Portugal, Spain, Germany, France, Slovak Republic
501	Portugal	Belgium, Latvia, Poland, Finland, Netherlands*, Denmark, Luxembourg, Sweden, Spain, Germany, France, Slovak Republic, Brunei Darussalam, Hungary
499	Spain	Sweden, Portugal, Germany, France, Slovak Republic, Brunei Darussalam, Hungary
498	Germany	Sweden, Portugal, Spain, France, Slovak Republic, Brunei Darussalam, Hungary, Norway*
497	France	Sweden, Portugal, Spain, Germany, Slovak Republic, Brunei Darussalam, Hungary, Norway*
497	Slovak Republic	Sweden, Portugal, Spain, Germany, France, Brunei Darussalam, Hungary, Norway*
496	Brunei Darussalam	Portugal, Spain, Germany, France, Slovak Republic, Hungary
495	Hungary	Portugal, Spain, Germany, France, Slovak Republic, Brunei Darussalam, Norway*, Italy, Iceland
491	Norway*	Germany, France, Slovak Republic, Hungary, Italy, Iceland
490	Italy	Hungary, Norway*, Iceland, Slovenia
490	Iceland	Hungary, Norway*, Italy, Slovenia
486	Slovenia	Italy, Iceland, Malaysia
484	Malaysia	Slovenia
478	Ukrainian regions (17 of 27)	Thailand, United Arab Emirates, Türkiye
476	Thailand	Ukrainian regions (17 of 27), United Arab Emirates, Türkiye
476	United Arab Emirates	Ukrainian regions (17 of 27), Thailand, Türkiye
473	Türkiye	Ukrainian regions (17 of 27), Thailand, United Arab Emirates
466	Chile	Croatia, Malta, Uruguay, Viet Nam, Greece
464	Croatia	Chile, Malta, Uruguay, Viet Nam, Greece
463	Malta	Chile, Croatia, Uruguay, Viet Nam, Greece
462	Uruguay	Chile, Croatia, Malta, Viet Nam, Greece

Mean score	Comparison country/economy	Countries and economies whose mean score is not statistically different from the comparison country's/economy's score
461	**Viet Nam**	Chile, Croatia, Malta, Uruguay, Greece
461	**Greece**	Chile, Croatia, Malta, Uruguay, Viet Nam
453	**Mexico**	Moldova, Qatar, Costa Rica, Kazakhstan
452	**Moldova**	Mexico, Qatar, Costa Rica, Kazakhstan
452	**Qatar**	Mexico, Moldova, Costa Rica, Kazakhstan
452	**Costa Rica**	Mexico, Moldova, Qatar, Kazakhstan
449	**Kazakhstan**	Mexico, Moldova, Qatar, Costa Rica, Israel, Romania
444	**Israel**	Kazakhstan, Mongolia, Romania, Serbia, Albania*, Peru
443	**Mongolia**	Israel, Romania, Serbia, Albania*, Peru
442	**Romania**	Kazakhstan, Israel, Mongolia, Serbia, Albania*, Peru, Philippines, Colombia
437	**Serbia**	Israel, Mongolia, Romania, Albania*, Peru, Philippines, Colombia
437	**Albania***	Israel, Mongolia, Romania, Serbia, Peru, Philippines, Colombia
436	**Peru**	Israel, Mongolia, Romania, Serbia, Albania*, Philippines, Colombia
434	**Philippines**	Romania, Serbia, Albania*, Peru, Colombia
432	**Colombia**	Romania, Serbia, Albania*, Peru, Philippines, Cyprus, Indonesia, Saudi Arabia, Bulgaria
427	**Cyprus**	Colombia, Indonesia, Saudi Arabia, Bulgaria, Montenegro, Ecuador
427	**Indonesia**	Colombia, Cyprus, Saudi Arabia, Bulgaria, Montenegro, Ecuador
426	**Saudi Arabia**	Colombia, Cyprus, Indonesia, Bulgaria, Montenegro, Ecuador
425	**Bulgaria**	Colombia, Cyprus, Indonesia, Saudi Arabia, Montenegro, Ecuador
423	**Montenegro**	Cyprus, Indonesia, Saudi Arabia, Bulgaria, Ecuador
422	**Ecuador**	Cyprus, Indonesia, Saudi Arabia, Bulgaria, Montenegro
413	**Georgia**	Jordan
408	**Jordan**	Georgia, Brazil, Argentina, Uzbekistan, El Salvador
406	**Brazil**	Jordan, Argentina, Uzbekistan, El Salvador
403	**Argentina**	Jordan, Brazil, Uzbekistan, El Salvador
402	**Uzbekistan**	Jordan, Brazil, Argentina, El Salvador
401	**El Salvador**	Jordan, Brazil, Argentina, Uzbekistan
393	**Palestinian Authority**	North Macedonia, Azerbaijan, Kyrgyzstan
389	**North Macedonia**	Palestinian Authority, Azerbaijan, Kyrgyzstan
388	**Azerbaijan**	Palestinian Authority, North Macedonia, Kyrgyzstan
388	**Kyrgyzstan**	Palestinian Authority, North Macedonia, Azerbaijan
379	**Dominican Republic**	Morocco
374	**Morocco**	Dominican Republic, Guatemala
369	**Guatemala**	Morocco
359	**Kosovo**	Lebanon, Armenia
358	**Lebanon**	Kosovo, Armenia, Paraguay
354	**Armenia**	Kosovo, Lebanon, Paraguay
352	**Paraguay**	Lebanon, Armenia
278	**Kenya**	

Significantly **above** the OECD average
Not statistically different from the OECD average
Significantly **below** the OECD average
Countries and economies are ranked in descending order of the mean performance in computational problem solving.
Source: OECD, PISA 2025 Database, Table I.B1.2a.4.

How performance in computational problem solving compares to performance in science

To what extent does the PISA computational problem-solving assessment measure a different set of skills with respect to those measured in the core assessment domains?

In a context where the use of artificial intelligence is on the rise, solving problems using computational tools and practices is a fundamental skill. Across education systems, these practices are increasingly embedded within “traditional” academic domains. Because the process of building computational artefacts naturally lends itself to applying core practices and concepts from broader STEM disciplines, computational thinking is often integrated into science curricula. This highlights a strong, natural synergy between scientific inquiry and computational problem-solving skills (OECD, 2023[5]).

It can therefore be expected that student performance in computational problem-solving correlates positively with performance in other academic fields, even if the PISA 2025 computational problem-solving assessment places more emphasis on how students learn to use computational tools and apply computational practices in interactive, digital environments (OECD, 2023[5])). Students who perform well in computational problem-solving are likely to perform well in other subject areas, just as students who do not achieve high scores in science, mathematics and reading are likely to achieve low scores in computational problem-solving. At the same time, the assessment is designed to capture a set of competencies that is related to, but not reducible to, performance in other PISA domains. This section examines these associations in detail, including the relative performance of students in computational problem-solving given their performance in science, mathematics and reading.

Table I.2.5 shows the OECD average within-country correlations between student performance in computational problem-solving, mathematics, reading and science. The within-country correlation between computational problem-solving and each of the other three PISA domains is: 0.76 with science, 0.69 with reading and 0.75 with mathematics. In comparison, performance scores among the three core PISA domains are more strongly associated, especially between performance in science and mathematics (0.88). This suggests that while strongly correlated, the computational problem-solving performance measures a distinct set of skills relative to those measured in the science, reading and mathematics performance (Table I.B1.2a.19). One distinctive feature of the computational problem-solving assessment is that students can make use of feedback and resources during the test. This means that performance in this domain reflects not only what students already know, but also how effectively they can learn, adapt and respond within the assessment itself. In this respect, the interpretation of performance differs somewhat from that in the other three domains.

Table I.2.5. Within-country correlation across domains in PISA 2025

OECD average

	Science	Reading	Mathematics
Computational problem solving	0.76	0.69	0.75
Mathematics	0.88	0.80	
Reading	0.87		

Source: OECD, PISA 2025 Database, Table I.B1.2a.19.

Another way of evaluating the uniqueness of the skills measured by the computational problem-solving scale is to examine the variation in student performance in computational problem-solving that cannot be associated with their performance in another scale. On average across the OECD, around 43% of the variation in computational problem-solving performance can be uniquely associated with student performance in science (the major domain focus in

PISA 2025) (Table I.B1.2a.19). This means that an important part of the variation in performance can be accounted for simply by student performance in science. At the same time, more than half of the variation in computational problem-solving remains outside its unique association with science[5], which further supports the view that computational problem-solving captures additional competencies beyond those measured in another domain such as science.

In 11 countries and economies (Albania*, Armenia, Azerbaijan, Bulgaria, Georgia, Hungary, Kyrgyzstan, Lebanon, Morocco, the Palestinian Authority and Uzbekistan), less than 30% of the variation in students' computational problem-solving performance is associated with their performance in science uniquely. In these countries and economies, more than in others, performance differences in computational problem-solving do not necessarily match those found in science. For example, some students who perform at a high level of proficiency in science achieve relatively low scores in computational problem-solving (and vice versa) in these countries/economies. By contrast, in Iceland, Brunei Darussalam, Qatar, New Zealand*, Australia, Ireland, Estonia and Canada* (in ascending order), around 50% or more of the variation in computational problem-solving performance reflects performance differences captured uniquely in the science assessment (Table I.B1.2a.19).

In some countries and economies, students had relatively higher or lower scores than expected in computational problem-solving given their scores on the other PISA assessments. In this section, the statistical concept "relative performance"[6] is used to examine how well students performed in computational problem solving compared to other students who have similar science, mathematics or reading scores.

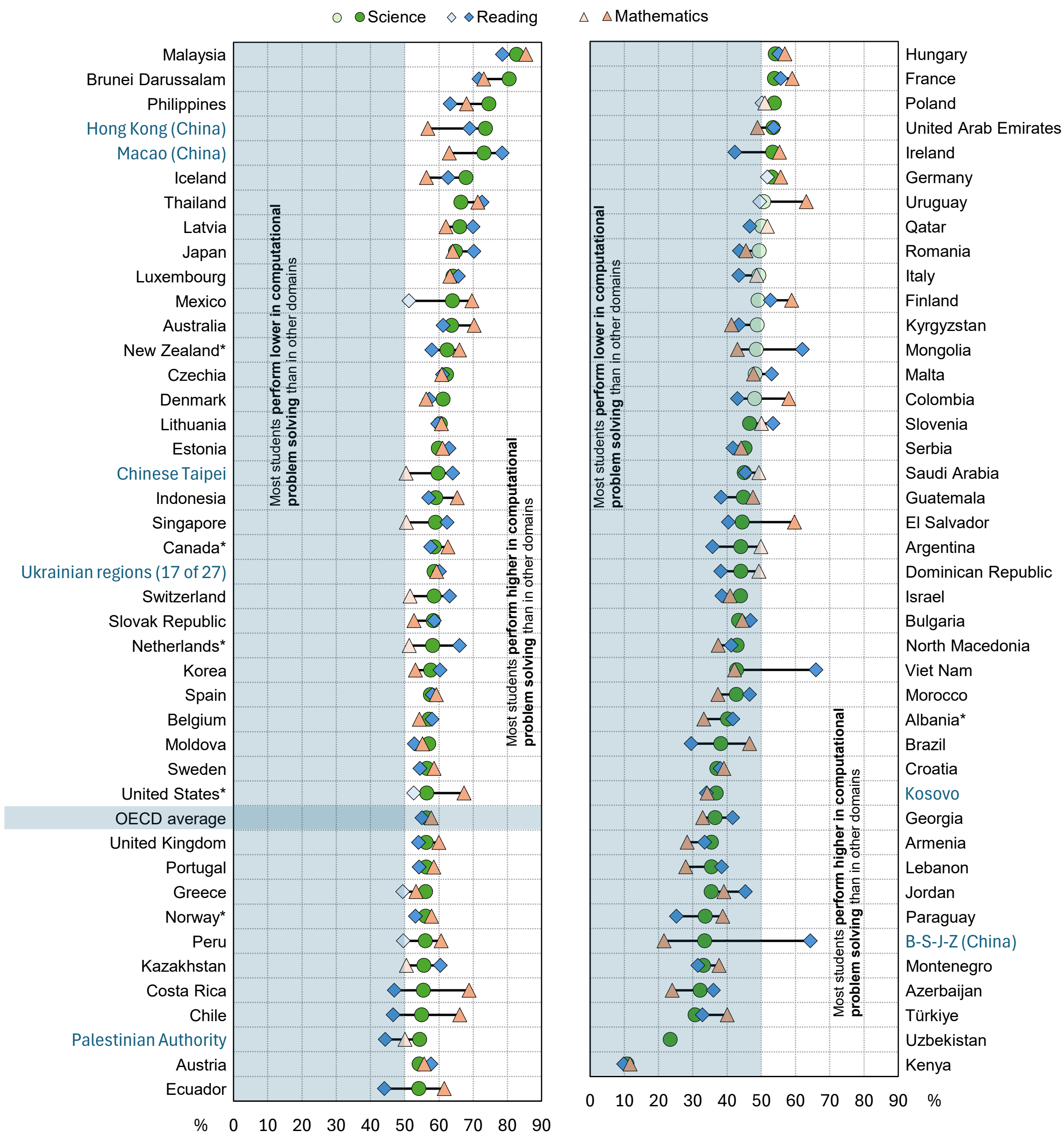
For example, if a country or economy has a positive relative score, it means that its students performed better in computational problem solving than other students with similar science proficiency in the PISA-participating countries and economies. Figure I.2.4 shows the share of students who performed above and below what would be expected given their performance in science, reading or mathematics. In Brunei Darussalam, Hong Kong (China), Macao (China), Malaysia and the Philippines, , over 70% of students scored significantly higher than expected in computational problem solving given their performance in science (Table I.B1.2a.20).

In six countries/economies (Hong Kong (China), Malaysia, Brunei Darussalam, the Philippines, Macao (China) and Iceland, in descending order), students scored over 30 points higher than expected in computational problem solving – a large relative performance advantage – after accounting for their science performance[7] (Table I.B1.2a.20). These six countries/economies include education systems across different levels of the computational problem-solving performance distribution (mean scores within proficiency Levels 2 to 5), including both high- and mid-performing systems (but no low-performing ones). This suggests that relatively strong performance in computational problem-solving is not confined to the very highest-performing systems and may also be observed among systems where students display only average levels of science proficiency.

By some margin, the country with the weakest relative performance after accounting for students' science performance is Kenya, with students scoring about 87 points lower in computational problem-solving than expected, followed by Uzbekistan, Azerbaijan and Armenia (55, 43 and 42 points lower, respectively). All countries with a negative relative performance in computational problem-solving after accounting for their science performance scored below the OECD average, except for Finland and top performer B-S-J-Z (China) (Table I.B1.2a.20).

Figure I.2.4. Relative performance in computational problem solving

Percentage of students performing below/above expected performance in computational problem solving



Notes: Only countries and economies with available data are shown.

Percentage of students who score below/above than expected is shown in a darker tone when it differs significantly from 50% (see Annex A3).

Countries and economies are ranked in descending order of the percentage of students performing above their expected performance in computational problem-solving compared to science.

Source: OECD, PISA 2025 Database, Table I.B1.2a.20. See https://stat.link/xgs41b for the underlying data.

Changes in performance across cycles

Changes in mean performance between 2022 and 2025

PISA data for 2022 and 2025 show contrasting patterns of mean performance across science, reading and mathematics. On average across 35 OECD countries, mean performance did not change significantly in science between 2022 and 2025. By contrast, mean performance dropped by 9 score points in mathematics and about 14 score points in reading (Tables I.B1.2a.36, I.B1.2a.38 and I.B1.2a.37).

As shown in Table I.2.6 , science performance remained broadly stable in many countries/economies (48 out of 74) between 2022 and 2025. In contrast, in reading and mathematics, at least half of countries/economies that can compare PISA 2025 and 2022 results showed a drop in mean performance (42 and 38 out of 74 in reading and mathematics, respectively).

Table I.2.6 Change between 2022 and 2025 in mean performance in science, reading and mathematics

	Science	Reading	Mathematics		Science	Reading	Mathematics		Science	Reading	Mathematics
Georgia	38	10	26	Chinese Taipei	2	-7	-1	Canada*	-5	-17	-12
Cambodia	35	18	29	United States*	2	-14	-2	Iceland	-6	-14	-9
Jordan	32	20	26	Australia	2	-7	-10	Hungary	-6	-21	-13
Montenegro	32	13	5	Qatar	2	-1	2	Croatia	-6	-22	-8
United Arab Emirates	26	15	21	Estonia	1	-12	-2	Brunei Darussalam	-6	-4	-7
Saudi Arabia	23	5	1	Dominican Republic	0	-6	0	Greece	-7	-16	-6
Thailand	23	13	13	Kosovo	0	-2	-5	Finland	-7	-16	-15
Türkiye	18	16	8	Bulgaria	0	-18	-12	Germany	-7	-15	-11
Philippines	17	20	16	Belgium	-1	-13	-10	Spain	-7	-23	-16
Costa Rica	13	1	3	Chile	-1	-12	-9	Morocco	-7	-18	-10
Slovak Republic	13	1	5	Ukrainian regions (17 of 27)	-1	-8	-9	Czechia	-7	-20	-10
United Kingdom	12	0	-1	Switzerland	-1	-13	-9	Norway*	-8	-24	-17
Mongolia	12	-4	-6	North Macedonia	-1	-1	-9	Sweden	-8	-21	-18
El Salvador	12	2	3	Singapore	-2	-8	-12	Japan	-9	-13	-10
Uruguay	9	-7	-4	Korea	-2	-15	-5	Malta	-13	-31	-27
Indonesia	6	7	-2	Peru	-2	-18	-9	Paraguay	-13	-21	-4
Austria	6	-13	-10	Macao (China)	-2	-9	-3	Argentina	-13	-12	-11
Brazil	6	-2	-2	Portugal	-3	-15	-12	Slovenia	-16	-24	-25
Italy	6	-7	-3	Romania	-3	-16	-9	Denmark	-16	-29	-19
New Zealand*	5	-4	1	OECD average-35	-3	-14	-9	Palestinian Authority	-17	-6	-18
Moldova	5	-7	-4	Netherlands*	-3	-18	-9	Serbia	-18	-26	-23
Mexico	4	-7	-7	Kazakhstan	-4	-1	-12	Guatemala	-22	-37	-10
Lithuania	3	-8	-5	France	-4	-18	-16	Israel	-23	-38	-25
Malaysia	3	5	-11	Poland	-4	-7	-5	Hong Kong (China)	-25	-20	-19
Colombia	3	-9	-2	Ireland	-4	-16	-12	Latvia	-25	-45	-23

Note: Only countries and economies that can compare PISA 2022 and PISA 2025 results in all three subjects are shown.
Positive change
Non-significant change
Negative change
Countries and economies are ranked, in descending order of the change in science performance between 2022 and 2025.
Source: OECD, PISA 2025 Database, Tables I.B1.2a.36, I.B1.2a.37 and I.B1.2a.38.

In many cases, the drop observed over just three years exceeded 20 score points, i.e. the yearly gain in test scores that is typically observed among students around the age of 15 (see Box I.2.2). This means that 15-year-olds in these countries in 2025 scored at or below the level expected of 14-year-olds in 2022.

- In science, the decline in performance exceeded 20 score points in Guatemala, Hong Kong (China), Israel and Latvia.
- In mathematics, the decline in performance was most pronounced and exceeded 20 score points in Israel, Latvia, Malta, Serbia and Slovenia.
- In reading, the decline in performance exceeded 30 score points in Latvia, Israel, Guatemala and Malta (in descending order). Drops between 20 and 30 score points were observed in Croatia, Czechia, Denmark, Hungary, Norway*, Paraguay, Serbia, Slovenia, Spain and Sweden.

Many more countries and economies than those listed above experienced performance declines between 2022 and 2025.

However, as shown in Table I.2.6, it is equally relevant to note that eight countries and economies improved their performance in all three subjects. Systems showing positive trends in at least one domain do not form a homogeneous group. Some are at the upper end of the average performance range in at least one domain and have sustained or improved upon already strong outcomes (e.g. Türkiye and the United Kingdom,), others are lower-performing systems that appear to be catching up (e.g. Cambodia, El Salvador, Jordan and the Philippines), sometimes by expanding access to effective schooling. Positive trends should therefore be interpreted in light of systems' starting points, mean levels of performance, and the distribution of achievement within systems. Several of these characteristics will be analysed later on in this chapter.

Box I.2.2. How much do 15-year-olds learn over one year of schooling?

New estimates based on 2015-2025 data

The average yearly learning gain of students around the age of 15 (e.g. between their 15th and their 16th birthday), can be used as a benchmark to assess the magnitude of PISA score changes over time. In earlier reports, and based on two studies providing estimates-based PISA data up to 2018 (Avvisati and Givord, 2023[6]; Avvisati and Givord, 2021[7]), this gain was estimated to amount to 20 score points, on average across 30 countries and economies (OECD, 2023, p. 156[3]). These studies also showed, however, that yearly learning gains can vary significantly across countries: in mathematics, for example, the estimates reported in Avvisati and Givord imply that the test scores of students in Austria, Scotland (United Kingdom) and Singapore increase about twice as fast as those of students in Brazil and Malaysia, which increase by about 12 points over a 12-month period.

PISA 2022 and 2025 data provide an opportunity to extend the analyses in Avvisati and Givord (2023[6]) to more countries, in particular to those countries/economies where testing dates changed over the 2015-2025 period. Table I.2.7 reports these estimates for ten countries/economies. It shows that, on average, yearly learning gains correspond to about 20 score points, regardless of the subject; with country-specific estimates ranging from around 25 points in the United Kingdom to only around 10 points in Serbia.

Readers should avoid using a single estimate to convert any difference in terms of years-of-schooling equivalents (or months-of-schooling equivalents). First, because there are significant differences in the pace of learning at a given age across countries, as is also evident from Table I.2.7. This reflects differences in how schooling is organised, the resources invested in education, and the quality of education itself. And second, because there is no reason to expect the pace of learning to remain constant over time: the average pace of learning measured at a single point in time, around age 15, may give only a limited indication of the test-score gains that can be expected in a particular country over two or three years.

Table I.2.7. Yearly learning gain in PISA scores in ten countries and economies

Country/economy	Yearly learning gain (effect of one year of schooling and age)					
	Science		Reading		Mathematics	
Austria	22.4	(2.8)	24.9	(3.4)	21.9	(3.1)
Brunei Darussalam	19.1	(4.3)	15.8	(4.5)	14.9	(3.6)
Cambodia	16.6	(2.6)	14.8	(2.7)	13.0	(2.9)
Ireland	19.7	(2.9)	16.2	(3.2)	19.0	(2.6)
Netherlands*	21.3	(3.8)	22.3	(4.6)	23.8	(3.7)
Serbia	13.7	(3.0)	11.4	(3.5)	7.4	(3.3)
England (United Kingdom)	24.5	(4.5)	24.0	(4.2)	27.0	(4.3)
Northern Ireland (United Kingdom)	26.0	(5.7)	23.3	(6.5)	25.1	(5.4)
Scotland (United Kingdom)	28.1	(6.8)	33.6	(7.3)	29.1	(5.4)
United States*	13.8	(4.4)	12.0	(4.6)	13.5	(3.6)

Notes: Estimates are based on the methodology in Avvisati and Givord (2023[6]) and include controls for gender, socio-economic status and immigrant background. See notes under Table 2 in the original study for more details.
Source: PISA 2015, 2018, 2022 and 2025 data.

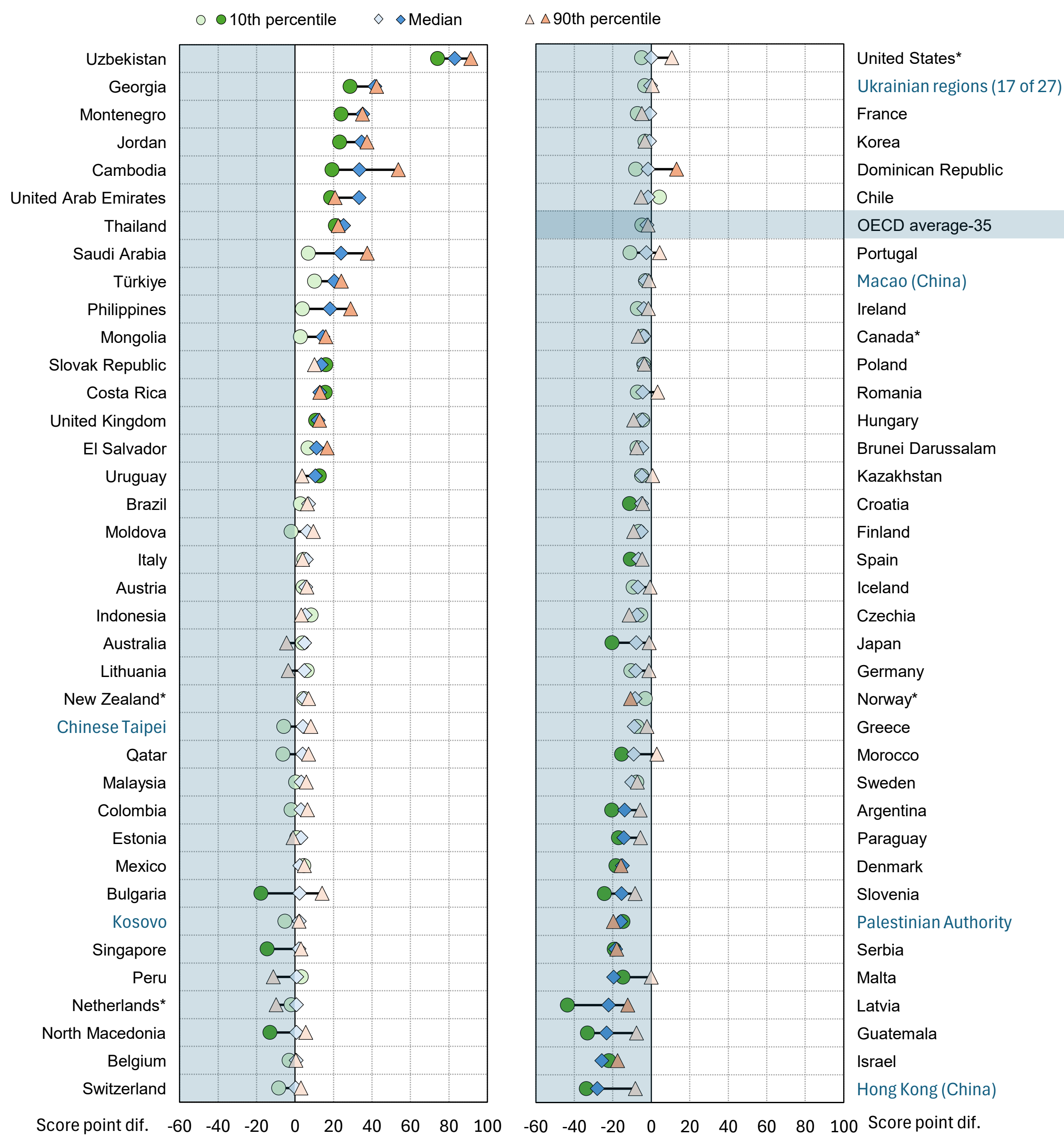
Changes in performance distributions between 2022 and 2025

The change in mean science, mathematics and reading performance across OECD countries (on average) and in most PISA-participating education systems was not uniform across low- and high-achieving students. While the average mean performance in science did not change significantly – contrasting sharply with the drops in reading and mathematics – looking only at the stable average ignores widening performance gaps. The performance gap between the highest- and lowest-achieving students in science actually widened by about 3 score points between 2022 and 2025 on average across 35 OECD countries, and by more than 15 score points between 2018 and 2025 (Table I.B1.2a.42). Indeed, PISA 2025 data suggest that scientific competencies have diminished among students on the lower end of the performance distribution, and similar issues affecting reading and mathematics could be affecting low-achieving students in science.

The 10th percentile is the point on the scale below which only 10% of students score. Likewise, the 90th percentile is the point on the scale above which only 10% of students score. The median or 50th percentile divides the performance distribution into two equal halves, one above and one below that position on the scale.

Across OECD countries, performance gaps had widened in the past, and continued to do so between 2022 and 2025. The mean scores of the lowest-performing 10% of students are the lowest reported since PISA started measuring science in 2006, on average across 35 OECD countries with comparable data across cycles. At the other end of the distribution, the mean scores of the highest-performing 10% of students have remained stable since PISA started assessing science (Table I.B1.2a.39). As a result, the gap between the highest- and lowest-performing students continued to widen; at 259 score points, it is the largest measured in PISA so far, on average, when measured by the inter-decile range (i.e. the difference between the 10th and 90th percentiles) (Table I.B1.2a.42).

Figure I.2.5. Average change in science scores for low- and high-achieving students (2022-2025)



Notes: Only countries and economies that can compare PISA 2022 and PISA 2025 results in science are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the change in median performance in science between 2022 and 2025.
Source: OECD, PISA 2025 Database, Table I.B1.2a.39. See https://stat.link/xgs41b for the underlying data.

In mathematics, mean performance was about 9 score points lower in 2025 compared to 2022 on average across 35 OECD countries. But the performance decline was less pronounced at the 75th and 90th percentiles (-7 and -5 score points): almost all students performed worse, but low-achieving students declined more than high-achieving students did (Table I.B1.2a.41). A similar pattern is observed in reading: the decline was slightly less pronounced at the 90th percentile (-13 score points), even if the drop was large across the score distribution (Table I.B1.2a.40). As a result, learning gaps between the highest- and lowest-performing students widened (see Chapter I, Figure I.2.6). The difference between the 10th and 90th percentiles increased by about 3 score points in reading between 2022 and 2025, but by about 8 score points in mathematics, on average across OECD countries (Tables I.B1.2a.43 and I.B1.2a.44).

The previous paragraphs refer to the average trend across 35 OECD countries; however, the distribution in performance evolved differently in different countries and economies. For example, in science, the inter-decile range widened significantly in 24 countries and economies; narrowed significantly in one (Peru); and did not change significantly in the remaining countries/economies for which comparable data for 2022 and 2025 are available (Table I.B1.2a.42).

In mathematics, the inter-decile range widened in 20 countries and economies and narrowed only in three, but did not change significantly in most countries/economies (Table I.B1.2a.44). Finally, in reading, the inter-decile range did not change significantly in most countries/economies. It widened in 10 and narrowed in 11 (Table I.B1.2a.43).

The performance distribution widened between 2022 and 2025 in all three subjects in Singapore, North Macedonia, Japan and Latvia, as well as on average across OECD countries (Tables I.B1.2a.42, I.B1.2a.44and I.B1.2a.43).

Changes in the proportion of 15-year-old students at different levels of proficiency

PISA scores in science, reading and mathematics are more than a tool to rank students and countries. Together with descriptive proficiency scales, scores give information on the level of science competencies students have mastered (see section above on What students can do in science). In science, at the highest proficiency levels, students can draw on high cognitive-demand scientific ideas to build models of complex phenomena, evaluate competing designs for scientific enquiries, and use sophisticated fact-checking procedures to critique the trustworthiness of scientific information. At the lower levels, students can identify a scientific explanation of a simple phenomenon drawing on basic scientific knowledge, information or evidence of low cognitive demand, and use basic procedural knowledge to identify the better interpretation or display of simple data (see Table I.2.2).

Trends in the proportion of low- and top-performing students indicate how their mastery of specific skills (as established in the described proficiency scale) has changed over time. Changes in the share of low-performing students indicate the extent to which school systems are advancing (or not) towards providing all students with basic skills. Trends in the share of top-performing students indicate whether education systems are making progress in ensuring that young people can successfully use their science, mathematics and reading skills to navigate a volatile, uncertain and complex environment.

As shown in Table I.2.8, on average across the 35 OECD countries with comparable data, the shares of both low- and top-performing students in science did not change significantly between 2022 and 2025. This stability at the OECD average masks some variation across systems. The share of top performers in science did not change significantly in the majority of systems (61), increased in 7 systems and decreased in 7 systems. Similarly, the share of low performers remained unchanged in many systems (45), increased in 14 systems and decreased in 16 systems. Only in Denmark and Latvia, did the shares of low performers increase and those of top performers decrease. By contrast, in Jordan, Uzbekistan, Montenegro, Saudi Arabia, Türkiye, the United Arab Emirates and the United Kingdom, the share of low performers decreased while the share of top performers increased,

Short-term changes between 2022 and 2025 provide only a partial view of how performance distributions are evolving. A decade-long perspective shows whether recent stability reflects genuine continuity or instead conceals gradual shifts in the shares of students below baseline proficiency and at the highest proficiency levels.

On average across the 35 OECD countries with available data, the proportion of students scoring below Level 2 in science (low-performing students) increased by three percentage points between 2015 and 2025, whereas the proportion of students scoring at or above Level 5 (top-performing students) remained unchanged over this period (Table I.B1.2a.33). Over the decade prior to 2025, 13 countries and economies showed a similar pattern of increasing shares of low-performing students and unchanged shares of top-performing students. In 8 countries and economies, the share of low-performing students increased while the share of top-performing students decreased (Table I.B1.2a.33).

The proportion of students who do not reach Level 2 on the PISA scales and the proportion of students who are able to score at Level 5 or 6, together indicate the characteristics of a country's/economy's talent pool. Only five countries/economies, Montenegro, Qatar, the Slovak Republic, Türkiye and the United Arab Emirates, , were able to simultaneously reduce their shares of low-performing students and increase their shares of top-performing students over the past decade. Twelve countries/economies reduced their share of low-performing students. In addition, Colombia, Korea, Macao (China), Chinese Taipei and the United States*, increased their share of students at Level 5 or 6 (Table I.B1.2a.33).

Table I.2.8. Change between 2022 and 2025 in low- and top performers in science

	Change in percentage of low performers	Change in percentage of top performers		Change in percentage of low performers	Change in percentage of top performers		Change in percentage of low performers	Change in percentage of top performers
Uzbekistan	-46.1	0.5	Mexico	-1.2	0.1	Brunei Darussalam	1.9	-0.7
Cambodia	-22.1	0.0	Australia	-1.1	-0.7	Sweden	1.9	-1.3
Georgia	-19.6	0.6	North Macedonia	-1.1	0.1	France	2.0	-1.0
Jordan	-16.9	0.2	Qatar	-0.8	-0.1	Ireland	2.0	-0.2
Montenegro	-15.1	0.9	Kosovo	-0.7	0.0	Singapore	2.1	1.7
Saudi Arabia	-13.0	0.4	Bulgaria	-0.5	1.0	Iceland	2.5	0.4
Thailand	-12.0	0.2	Netherlands*	-0.3	-1.9	Portugal	2.6	0.8
United Arab Emirates	-10.0	1.7	Estonia	-0.2	-0.2	Kazakhstan	2.8	-0.4
Philippines	-8.9	0.1	Peru	-0.1	-0.3	Croatia	2.9	-0.5
Mongolia	-6.6	0.1	Chile	0.3	-0.4	Spain	3.1	-0.7
Costa Rica	-6.3	0.0	United States*	0.4	1.9	Japan	3.3	-0.8
El Salvador	-6.0	0.0	Ukrainian regions (17 of 27)	0.5	0.0	Greece	3.6	0.0
Türkiye	-5.2	3.4	Macao (China)	0.5	-0.2	Germany	3.9	-0.2
Uruguay	-4.7	0.0	Korea	0.5	-1.0	Paraguay	4.5	0.0
Slovak Republic	-4.1	0.8	Chinese Taipei	0.8	2.4	Argentina	5.3	0.1
Brazil	-2.9	-0.3	Belgium	1.0	0.1	Denmark	5.5	-2.2
United Kingdom	-2.7	2.5	Canada*	1.1	-1.4	Guatemala	6.2	0.0
Indonesia	-2.7	0.0	Hungary	1.1	-1.3	Malta	6.3	0.5
Dominican Republic	-2.6	0.0	OECD average-35	1.2	-0.3	Slovenia	6.5	-1.4
Moldova	-2.5	0.4	Poland	1.3	-0.5	Palestinian Authority	7.7	0.0
Lithuania	-2.0	-0.7	Finland	1.4	-1.7	Serbia	7.9	-1.0
Italy	-1.7	0.2	Czechia	1.4	-1.9	Israel	7.9	-1.5
Malaysia	-1.5	0.0	Norway*	1.5	-1.5	Hong Kong (China)	8.1	-1.6
Austria	-1.5	1.0	Switzerland	1.6	0.6	Latvia	11.4	-1.5
Colombia	-1.4	0.1	Morocco	1.7	0.1			
New Zealand*	-1.3	1.4	Romania	1.8	0.4			

Negative change in percentage of low performers.
Positive change in percentage of top performers
Non-significant change.
Positive change in percentage of low performers.
Negative change in percentage of top performers.
Source: OECD, PISA 2025 Database, Table I.B1.2a.33.

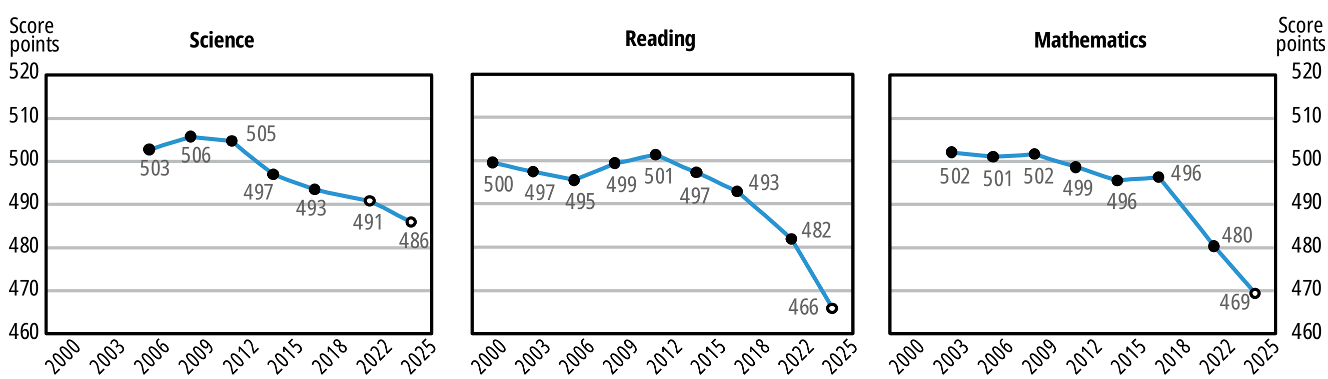
In reading, the proportion of students scoring below Level 2 (low-performing students) increased by 10 percentage points between 2015 and 2025, on average, whereas the proportion of students scoring at Level 5 or 6 (top-performing students) decreased by two percentage points (Table I.B1.2a.34). A similar change was also observed in mathematics, with an increase of about 9 percentage points in the proportion of students scoring below Level 2 and a decrease of about two percentage points in the share of top-performing students (Table I.B1.2a.35).

Performance trajectories since the early PISA assessments

In 25 years of PISA, since the first PISA assessment in 2000, the average trend across OECD countries is negative (Figure I.2.6). Performance in PISA 2025 was the lowest in all subjects, significantly below the mean performance observed in any earlier assessment (except for science in PISA 2022). In science and reading, the strongest performance was observed in 2009 and 2012, respectively, then the trajectory turned negative. In mathematics, performance remained close to the 2003 level through all assessments up to 2018, then dropped sharply between 2018 and 2025.

Figure I.2.6. Trends in performance over time in science, reading and mathematics

OECD average-23



Note: White dots indicate mean-performance estimates that are not statistically significantly above/below PISA 2025 estimates.
Source: OECD, PISA 2025 Database, Tables I.B1.2a.36, I.B1.2a.37 and I.B1.2a.38. See https://stat.link/xgs41b for the underlying data.

Box I.2.3. Why has reading performance declined over time? Four underlying forces

> *This box provides an overview of performance trends. More detailed analyses are presented in Annex A1 and in certain sections of Chapters 3 and 4.*

Reading offers a powerful lens to examine performance declines, as reading comprehension has a key role in understanding and successfully completing tasks in all other PISA domains. While trends in reading often show steeper declines than trends in mathematics and science, how a country's performance evolves in reading, in comparison to other countries, remains closely related to its "relative" trend in mathematics and science (Annex A1). This suggests that common factors affect learning across domains.

To rule out simple explanations, analyses were conducted to verify that the observed declines are not measurement artefacts. Results in Annex A1 show that the decline is unlikely to reflect measurement issues or PISA-specific anomalies. Rather, the signal remains strong despite the known limitations of current educational measurement tools.

What, then, can explain the widespread declines observed in reading? The discussion in this box touches on four complementary levels: students, schools, education systems and broader societal trends. These are best understood as distinct forces which complement each other to produce effects, each adding depth and clarity to the context of the decline, rather than as rival explanations.

Students: Not a uniform decline in skills, but reduced attention and, in some countries, increasingly negative attitudes towards school

The decline in reading scores appears to reflect not just a uniform drop in success rates, but rather that students found certain types of reading tasks even increasingly difficult. Such uneven declines in performance, just like science competencies often held steady even when reading skills declined, does not suggest a uniform erosion of students' skills.

Within the PISA reading test, the most rapidly declining success rates were observed on tasks that used longer texts as stimuli. Between 2018 and 2022, success rates declined in particular on reading tasks involving higher-level processes, such as evaluating and reflecting, which require careful reading, remembering and integrating multiple pieces of information, sometimes across several sources. In contrast, the least affected tasks were those requiring students to locate a single piece of information. The latter tasks can often be solved through more targeted engagement with the text. Over a longer period (2018 to 2025), declines are more uniform across all types of tasks but difficulties related to text length remained a strong driver of the overall decline (Annex A1).

PISA results also suggest, more broadly, that the decline could be related to students' capacity or willingness to sustain focused engagement with demanding reading tasks (Annex A1):

- Performance declines are already visible at the very start of the reading assessment, in the fluency items that measure how quickly and accurately students process simple written statements. The proportion of accurate and fluent readers declined by about seven percentage points between 2018 and 2025. The proportion of hasty readers – those who gave fast and incorrect responses – increased by about five percentage points, on average, from almost 7% in 2018 to 11% in 2025.
- The proportion of hasty responses – fast and incorrect – also increased significantly in the rest of the reading assessment over the same period, on average. At the same time, the proportion of non-reached items declined. This suggests that students became more inclined to answer quickly rather than to leave difficult items unanswered.
- Performance declined throughout the reading assessment, but more strongly in the later sections of the test than in the early sections. This appears consistent with the above two findings: it suggests that students' attention, persistence or confidence when facing difficult tasks declined over time.

Students' self-reported effort, in PISA, and their general attitudes towards learning and school, tended to also decline:

- In most countries and economies, the effort that students reported having spent on the PISA test declined in 2025 compared with 2022 and 2018 (Annex A1).
- Students' reports of their motivation for learning and engagement with school also declined between 2022 and 2025 (Chapter 3) and the extent to which the latter declines were observed in different countries and economies aligns with the varying magnitude of drops in reading performance over the most recent period. For example, changes in the share of students reporting that they are "curious about many different things" are correlated with changes in reading performance (r = 0.54). Changes in the share of students reporting they finish what they start even when the task becomes boring are moderately correlated with reading trends (r = 0.33).

In contrast, students' perceived value of school did not show a similarly negative tendency, in general (Chapter 3): students' views became more negative in some systems, but more positive in others (Table I.B1.3.71). Still, in some countries, negative shifts in values may have amplified underlying pressures: indeed, countries and economies in which fewer students believed that school is a waste of time had, usually, more positive developments of their reading scores than countries where an increasing proportion of students held such negative beliefs (r = 0.53). Although not causal, this suggests that in some countries and economies, performance declines coincided with shifts in students' engagement with school and learning.

Schools and classrooms: Greater need for student support, more disruptions and difficulties keeping discipline

To a large extent, student engagement develops in school contexts, and the data suggest that some of these contexts have become more challenging. PISA 2022 showed that during school closures related to the COVID-19 pandemic, many students struggled with remote learning: almost one out of two students reported having difficulty motivating themselves to do schoolwork, and one out of three reported that they often did not fully understand their school assignments (OECD, 2023[8]). At the time of the pandemic, these difficulties were not only technical; they reflected also perceived shortages in teacher support, among other aspects.

By 2025, student perceptions of teacher support have improved in some areas, such as in the opportunities given by teachers for students to express their opinions, but weakened in others. For example, PISA data indicate declines in the share of students reporting that science teachers continue teaching until students understand, between 2015 and 2025, on average across OECD countries (Table I.B1.4.116 in Chapter 4). Changes in this indicator are moderately correlated with changes in (science) performance across participating countries and economies over the same period (r = 0.32). These associations do not imply causality, but suggest that, in countries/economies where science performance declined, instructional conditions reported by students often worsened at the same time; while they were more likely to improve in countries/economies where performance improved.

Classroom and school climate also changed over time. On average across OECD countries, bullying declined between 2018 and 2022 but increased again by 2025, although not necessarily to pre-2022 levels (Table I.B1.4.142 in Chapter 4). And in countries where the share of students who reported being threatened by other students increased the most, between 2022 and 2025, reading results tended to decline more severely (r = -0.63). Principals also reported, over the same period, a more negative school climate, including more frequent vandalism, theft, profanity, intimidation or verbal abuse of students or teachers, and physical injury. Changes between 2022 and 2025 in the share of students who were exposed to profanity are negatively, although moderately, correlated with the changes in reading performance (r = -0.36).

Evidence from TALIS 2024 further points towards worsening discipline over recent years in lower secondary classrooms. Teachers in 2024 reported spending more time keeping order in the classroom than in 2018, leaving less time for teaching – and for learning. On average, the share of class time spent keeping order increased from 13% in 2018 to 16% in 2024 (OECD, 2025[9]). Even with unchanged formal instructional time, more time spent managing disruption reduces time for learning activities.

These changes in schools and classrooms matter because the development of reading competencies depends heavily on repeated, sustained engagement with texts and on structured support from teachers, particularly when students are expected to make sense of complex material (Duke and Pearson, 2009[10]; Shanahan, Fisher and Frey, 2016[11]; Snow, 2002[12]; Guthrie and Wigfield, 2000[13]). If classrooms became more difficult to manage and teaching was more frequently disrupted, the conditions for such sustained engagement may have weakened. This does not mean that teachers and schools are responsible for the decline directly. Rather, schools may be the setting where multiple pressures come together.

System-level pressures: More diverse classrooms and feeble governance

Several system-level changes may also have shaped recent performance trends. One concerns how systems have addressed changes in the composition of classrooms. TALIS 2024 shows that across OECD countries, almost three out of four teachers – 73% on average – reported teaching to academically diverse classes, meaning that the class included more than 10% (but less than 100%) of low achievers and/or gifted students (OECD, 2025, pp. 45-46 [Table 1.26] and 117-118 [Table 3.19][9]). Evidence from TALIS also shows that higher shares of low-achieving students are linked to greater classroom disruption (OECD, 2025, p. 118[9]), and maintaining inclusive, high-quality instruction may therefore be more demanding in some contexts.

Moreover, while socio-economic composition remained broadly stable between 2018 and 2024, principals reported that their schools had more refugee students, more non-native speakers, more students with special needs and more students with migrant background. Classroom diversity is not inherently problematic. PISA data show that changes in student body composition do not explain the overall decline in performance (Annex A1). Rather, the issue is whether education systems have the capacity to respond to increasing needs for differentiated teaching, language support, special education resources and broader socio-economic support, particularly when several forms of need are concentrated in the same schools or classrooms.

The (limited) use of data may also have played a role. TALIS 2024 highlights, in several systems, a decline in the use of external student performance data for teacher appraisal (OECD, 2025, p. 127[9]). PISA 2025 points to a related trend: school principals reported a decline, on average across OECD countries, in the use of data to plan actions for teaching and school improvement (Table I.B1.4.178 in Chapter 4). Some countries with large reading declines between 2022 and 2025, such as Norway*, concurrently seemed to reduce the use of data for improvement. However, this pattern does not appear to be consistently associated with more negative trends in reading performance (countries with less negative trends, such as Türkiye, also reported similar reductions in the use of data). This evidence should therefore be interpreted cautiously. Still, the lack of a systematic association among these two trends does not rule out the possibility that weaker feedback loops sometimes led to lags in identifying learning gaps and targeting recovery after the pandemic, particularly in systems where pressures to deal with more challenging classrooms were rising at the same time.

Societal trends: Changing reading habits, more digital lives, and the pandemic

Beyond schools and education systems, broader societal trends may also have affected how young people learn and engage with school, in general, and with written texts, in particular.

PISA 2018 results already showed that students' reading habits were changing. Compared with 2009, larger proportions of both boys and girls reported that they read only if they have to (OECD, 2021[14]). Across OECD countries, the index of enjoyment of reading declined over the decade to 2018. At the same time, students reported that they read fewer fiction books, print magazines and physical newspapers, and that they engaged increasingly with text through online activities such as searching for information, chatting and reading news online (OECD, 2021[14]).

Parents also play an important role in shaping children's attitudes towards reading from the earliest years. Previous PISA analyses have shown that students whose parents were seen reading at home, or whose parents reported that they enjoyed reading, tended to report greater enjoyment of reading themselves (OECD, 2021[14]). Although results from the PISA parental questionnaire in 2009 and 2018 cannot be compared directly because of changes in response options, parents' responses suggest that reading lost ground as their "favourite hobby", and therefore that reading enjoyment declined among parents, not just their children, across many of the countries and economies with available data (PISA 2009 and 2018 compendia). Changes in 15-year-olds' reading engagement therefore seem to have coincided with broader changes affecting other age groups too, including their parents, who are important role models and can strongly influence young people's reading habits at home.

Changing reading practices involve more than just the amount of reading, but also the type of text that readers read. In PISA 2018, when reading practices were a major focus of the PISA questionnaire, students who read fiction and longer texts for school achieved higher reading scores in the test, after accounting for students' and schools' socio-economic profile (OECD, 2021[14]). Students who more often read books on paper also tended to perform better than those who read books primarily on digital devices or rarely read books.

PISA 2025 data also point to changes in the nature of students' digital engagement between 2022 and 2025. A larger share of students reported spending more than one hour per day browsing social networks or playing video games, while fewer reported using digital devices for activities such as seeking practical information online or creating digital content (Tables I.B1.4.38 and I.B1.4.41 in Chapter 4). These trends do not establish a direct link between online activities and declining reading performance. However, they add to earlier evidence that the environments in which young people encounter and use text have continued to change across PISA cycles. Students today continue to read and write extensively in digital settings, but often for different purposes and in different formats than in the past. This changing balance of digital activities may be relevant to understanding the broader context in which sustained reading, information integration and critical evaluation develop.

PISA 2025 students, who were born in around 2009, grew up during a period of rapid change and diffusion of personal electronic devices, which may have altered reading habits, favouring shorter, fragmented digital engagement over sustained reading. Existing research, using sources other than PISA, documents changes in how young people read, and in what, when, and why they do so: they tend to engage more often with digital texts that encourage selective or functional reading, switch more frequently between tasks, and spend less time on sustained reading practices that are strongly associated with the development of reading comprehension (Mol and Bus, 2011[15]; Baron, Calixte and Havewala, 2017[16]; Altamura, Vargas and Salmerón, 2023[17]; Salmerón et al., 2024[18]).

The impact of the pandemic on students' lives and learning journey also remains an important part of the broader context, but its role is unlikely to be captured by the length of school closures alone. The students assessed in PISA 2025 were around 10 or 11 years old at the onset of the pandemic, a period when students usually move from the acquisition of foundational literacy and numeracy towards more advanced comprehension and problem-solving skills. Across 29 education systems with available data, school closures during the peak period from February to June 2020 varied widely, from no closures in Sweden to around 20 weeks in Costa Rica and Colombia (OECD, 2021[19]). Yet there is no simple relationship between the duration of closures and subsequent reading trends: while the drop in reading performance was of about 9 score points in Colombia, there was no significant change in Costa Rica and there was a drop of about 21 score points in Sweden. This does not mean that the pandemic had no effect. Rather, it suggests that the direct impact of school closures could often be mitigated through quality remote learning, teacher support, family resources, student engagement, and subsequent recovery policies; and, at the same time, that the unprecedented experiences of the pandemic period may have acted as a catalyst for other, and more profound, shifts in habits and values.

Irregular student attendance may be especially relevant. After the pandemic, many countries experienced persistently high levels of student absence across education levels. In many countries, students who attended schools in the past 10 years may have missed more classes (or had their classes disrupted) than previous generations of students not just because of COVID-related school closures, but also due to repeated absences (justified and/or unjustified). For example, international data on fourth-grade students show that the share of students absent from school at least once every other week increased from 10.7% in 2019 to 14.8% in 2023, on average across OECD countries (OECD, 2026[20]). For the PISA 2025 cohort, lower attendance over several years may have mattered more than the level of attendance observed at age 15 alone. Lower exposure to regular instruction, even if spread across several years, may have weakened the accumulation of reading and mathematics skills. And, while the causes of school attendance problems are certainly complex and deserve further research, it is possible that shifting parental perceptions about the value of regular school attendance, and more flexible teleworking policies introduced after COVID, played a role (OECD, 2026, pp. 44-45[20]).

Finally, PISA data suggest that, in a number of systems, fewer conversations with parents or other family members were taking place at home to support students in their school life in 2025, compared to just three years earlier (Table I.B1.4.123 in Chapter 4). For example, in 2025, fewer students reported that their parents asked them what they had done at school that day. However, this trend is observed in countries/economies with large declines in reading skills to a similar extent as in countries/economies where reading scores in 2025 remained close to their 2022 levels.

Conclusion

The evidence does not point to one simple explanation for the performance decline. A more plausible interpretation is that performance declines reflect changes occurring at many levels, with small forces often aligning to produce strong effects on students' learning. At the student level, PISA shows, in many countries/economies, increasing difficulties with tasks that require sustained engagement, a greater tendency to produce hasty responses, lower willingness to spend effort on school tests (particularly if low stakes, such as PISA), and weakening curiosity and perseverance. At the school level, classroom climate and disciplinary conditions may have become more difficult in ways that reduce the time that remains available for learning; and students express unmet needs for support from teachers more often than before. At the system level, societal and demographic changes brought more diversity into classrooms, but system-level tools to govern this greater complexity (e.g. with timely monitoring systems and feedback routines) were sometimes insufficient. And outside of school walls, the lives of children and adults, and societies at large, also changed, often in ways that are not conducive to more learning: shifting reading habits, more intense use of digital devices, higher absenteeism, lower family support and the after-effects of the pandemic have reshaped the social context in which young people learn.

These hypotheses should be read as complementary rather than competing. They do not assign responsibility to students, teachers, schools or families. Instead, they point to a changed (learning) environment in which sustained reading, focused engagement, instructional support and cumulative skill development may all have become harder to maintain. Reading is central to this interpretation because it is both a major learning domain in its own right and a foundation for learning across subjects. After 25 years of PISA, understanding why reading performance has declined in each national context is therefore essential not only for explaining the 2025 results, but also for identifying where education systems may need to rebuild the conditions for learning in the years ahead.

Decade-long trends in performance

Over the most recent decade (2015-2025), the trend in performance has been negative in all three core subjects, on average across 35 OECD countries with available data. Indeed, the recent stability in science performance masks a sustained, long-term decline. On average across OECD countries, the decennial trend is negative, indicating an average drop of 7 score points in science performance since 2015 (Table I.B1.2a.36).

As shown in Table I.2.9, such decade-long negative trends can also be seen in 28 countries and economies, with average negative trends ranging from 7 score points in Malta to 37 in Iceland, over the same period. However, in a number of countries and economies, PISA data show average decade-long positive trends in science, ranging from an average trend of 7 score points in Singapore to 62 in Türkiye and 72 in Cambodia.

Figure I.2.7 shows the linear trend in median performance since PISA 2015, alongside trends observed in the performance of students in the 10th and 90th percentiles.

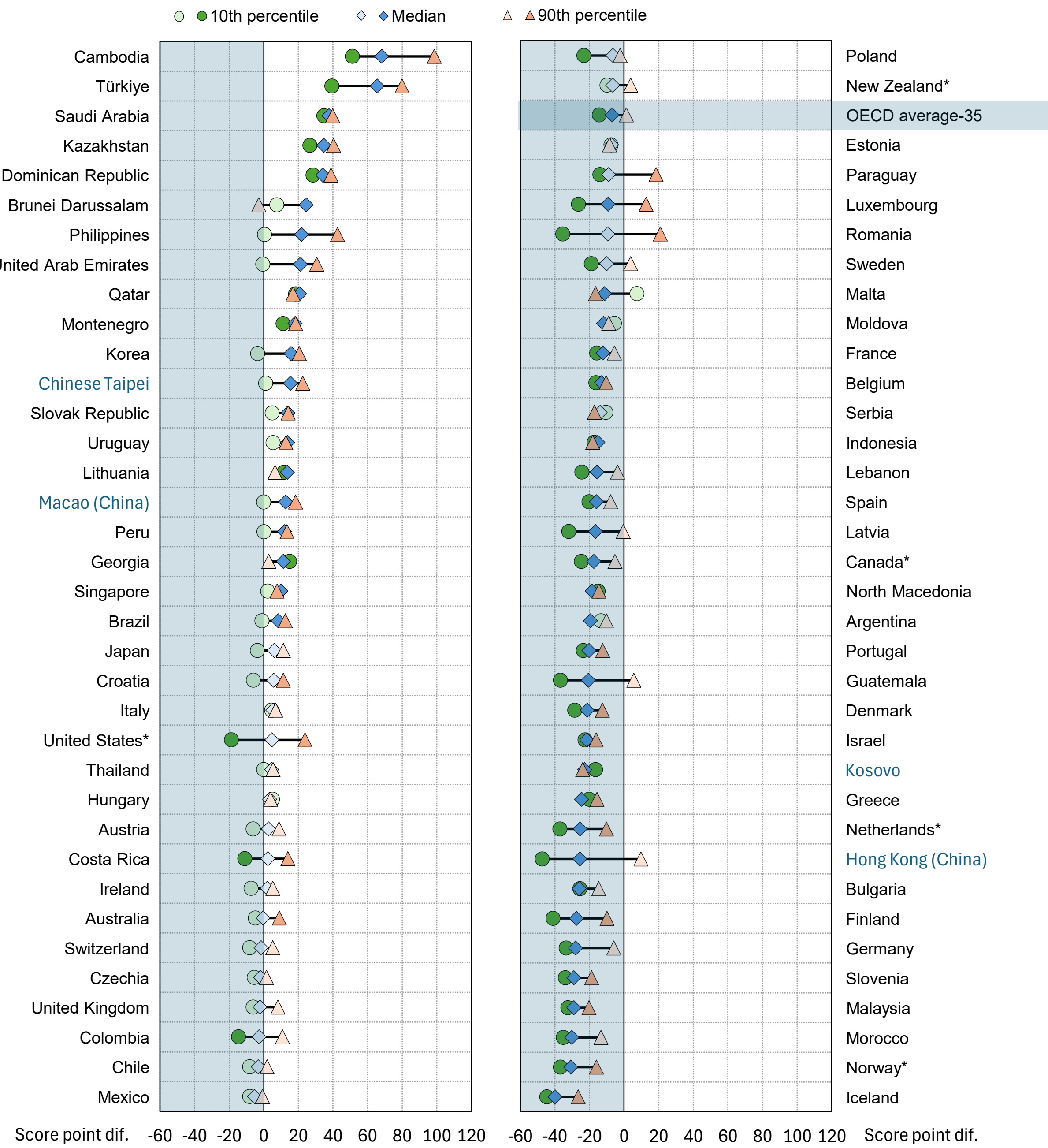
Table I.2.9. Trends in mean performance in science, reading and mathematics since 2015

Based on average decennial trend

	Science	Reading	Mathematics		Science	Reading	Mathematics		Science	Reading	Mathematics
Cambodia	72	36	57	Thailand	4	-20	-16	Serbia	-14	-33	-44
Türkiye	62	34	35	United States*	4	-7	-10	Argentina	-15	-17	-17
Saudi Arabia	37	-18	25	Costa Rica	2	-14	-17	Lebanon	-15	-19	-20
Kazakhstan	34	-3	-12	Austria	2	-17	-21	Spain	-15	-42	-27
Dominican Republic	34	-7	14	Australia	1	-12	-16	North Macedonia	-16	-7	5
Philippines	22	38	25	United Kingdom	0	-7	-9	Canada*	-16	-36	-31
Qatar	19	18	12	Ireland	0	-18	-23	Latvia	-17	-51	-23
United Arab Emirates	18	-6	20	Switzerland	-1	-19	-22	Indonesia	-17	-32	-24
Montenegro	16	-13	-14	Czechia	-2	-17	-17	Guatemala	-17	-42	1
Chinese Taipei	14	14	9	Paraguay	-2	-23	12	Portugal	-19	-36	-34
Brunei Darussalam	13	27	8	Colombia	-2	-23	-11	Israel	-20	-36	-33
Korea	12	-14	-1	Chile	-4	-21	-19	Denmark	-21	-39	-42
Slovak Republic	12	-8	-13	New Zealand*	-5	-12	-19	Kosovo	-21	-9	-13
Lithuania	11	-9	-9	Mexico	-5	-15	-22	Greece	-21	-45	-33
Uruguay	11	-10	-14	OECD average-35	-7	-27	-24	Hong Kong (China)	-23	-49	-26
Macao (China)	10	-12	3	Malta	-7	-29	-36	Bulgaria	-23	-44	-38
Georgia	10	-17	8	Estonia	-8	-21	-15	Germany	-24	-44	-45
Peru	9	-4	-7	Romania	-8	-18	-22	Netherlands*	-25	-62	-34
Singapore	7	-3	1	Luxembourg	-8	-38	-29	Finland	-26	-55	-45
Brazil	7	0	-2	Sweden	-9	-36	-33	Morocco	-27	-54	-18
Italy	5	-7	-24	Moldova	-9	-15	-10	Slovenia	-28	-61	-52
Japan	5	-7	-3	Poland	-10	-29	-27	Malaysia	-28	-34	-62
Hungary	4	-16	-18	France	-12	-44	-38	Norway*	-29	-60	-54
Croatia	4	-30	-8	Belgium	-13	-33	-30	Iceland	-37	-64	-46

Notes: Only countries and economies that can compare results in all three subjects in PISA 2025 and at least two previous assessments among PISA 2015, PISA 2018 and PISA 2022 are shown.
The average decennial trend is the average change, per 10-year period, between PISA 2015 and PISA 2025, calculated by a linear regression. The average decennial trend is only computed for countries with comparable data in at least three PISA assessments over the period considered.
Positive change.
Non-significant change.
Negative change.
Countries and economies are ranked, in descending order of the decennial trend in science since 2015.
Source: OECD, PISA 2025 Database, Tables I.B1.2a.36, I.B1.2a.37 and I.B1.2a.38.

Figure I.2.7. Average decennial trend in science for low- and high-achieving students (2015-2025)



Notes: Only countries and economies that can compare results in science in PISA 2025 and at least two previous assessments among PISA 2015, PISA 2018 and PISA 2022 are shown.
The average decennial trend is the average change, per 10-year period, between PISA 2015 and PISA 2025, calculated by a linear regression. The average decennial trend is only computed for countries with comparable data in at least three PISA assessments over the period considered.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the average decennial trend in median performance in science.
Source: OECD, PISA 2025 Database, Table I.B1.2a.39. See https://stat.link/xgs41b for the underlying data.

Trends at the 10th percentile indicate whether the lowest-achieving 10% of students in a country/economy moved up the PISA scale over time. Similarly, trends at the 90th percentile indicate improvements among a country's/economy's high-achieving students.

Among countries and economies whose mean science performance worsened since 2015, there have been both widening and shrinking performance gaps:

- In Denmark, Finland, Iceland, North Macedonia, the Netherlands*, Norway*, Portugal and Slovenia, declines among both low-achieving and high-achieving students resulted in the widening in the achievement gap in science (measured by the distance between the 10th and 90th percentiles) between 2015 and 2025.
- In Belgium, Greece, Indonesia and Israel, there were declines among both low-achieving and high-achieving students, but the gap remained unchanged.
- Only in Kosovo did more rapid declines among high-achieving students result in the achievement gap in science shrinking between 2015 and 2025.
- In Canada*, Germany, Hong Kong (China), Latvia, Lebanon, Poland and Spain, as was the case on average across the 35 OECD countries that can compare PISA results across all assessments, the long-term decline occurred among low-achieving students only, resulting in a widening gap with respect to high-achieving students whose scores did not change over the decade (Tables I.B1.2a.36, I.B1.2a.39 and I.B1.2a.42).

Among countries and economies where science performance improved over the 2015-2025 period, Lithuania, Montenegro and Qatar saw no significant change in the achievement gap, although low-achieving students' results improved. In Korea, Macao (China), Chinese Taipei and the United Arab Emirates, the average improvement was due to high-achieving students improving while low-achieving students showed no significant change, which widened the performance gap. Only in Georgia did performance in science among low-achieving students improve while high-performing students remained unchanged, resulting in a shrinking performance gap (Tables I.B1.2a.36, I.B1.2a.39and I.B1.2a.42).

Finally, among countries and economies with no significant change in mean science performance over the 2015-2025 period, Austria, Brazil, Colombia, Costa Rica, Croatia, Ireland, Japan, Romania, Sweden, the United Kingdom and the United States* nevertheless experienced a widening of their performance gap.

On average across the 35 OECD countries that can compare PISA results across all assessments, performance differences widened in reading and mathematics even though both low-achieving students and high-achieving students performed worse; however, low-achieving students declined by more than high-achieving students did (Tables I.B1.2a.37, I.B1.2a.40, I.B1.2a.43, I.B1.2a.38, I.B1.2a.41 and I.B1.2a.44).

When looking at reading performance, in countries/economies with declining decade-long trends, the drop was driven by low-achieving students (i.e. changes were statistically significant only for low-achieving students) in Australia, Costa Rica, Korea, Macao (China), Mexico, New Zealand*, Romania, Switzerland, and Uruguay. In these systems, the result was a widening of the performance gap, with the exceptions of Mexico, Romania and Uruguay. At the opposite end, the average drop was driven by a drop in performance among high-achieving students in Georgia, Lebanon, Matla, Moldova and Montenegro, which resulted in a shrinking of the performance gap.

In countries/economies with declining decade-long trends in mathematics performance, the drop was driven by low-achieving students in Australia, Czechia, Estonia, Hong Kong (China), the Netherlands*, New Zealand*, Romania, the Slovak Republic, Switzerland and the United Kingdom. In all of these systems, the result was a widening of the performance gap. Moreover, the average drop was driven by a drop in performance among high-achieving students, in Chile, Colombia, Indonesia, Kosovo, Lebanon, Mexico, Moldova, Montenegro and Thailand, . In these systems, this resulted in a shrinking of the performance gap with the exceptions of Colombia and Thailand, where the gap remained unchanged.

Average 10-year trends in performance, taking into account changes in enrolment rates

In most countries and economies, all boys and girls who were born in 2009 were of the correct age to sit the PISA 2025 test (in countries and economies that tested students during the second part of 2025, a 12-month period spanning the years 2009 and 2010 defined the eligible birthdates). However, age was not the only criterion for eligibility: 15-year-olds also had to be enrolled in 7th Grade or higher at the time of testing.

Eligibility in PISA is determined by more than just a student's age, the PISA sample excludes 15-year-olds who do not go to school or who are severely delayed in their school-grade progression. However, PISA results still reflect a combination of 15-year-olds' access to education and the quality of the education they have received over the course of their lives.

Globally, enrolment in secondary education has continued to expand over the past decade in many countries. As a result, PISA coverage – the proportion obtained by dividing the number of PISA-eligible students by the total number of 15-year-olds in a country – has increased in a number of participating countries and economies.

Many of these countries and economies saw a declining trend over the past decade in one or two and, sometimes, in all three subjects. These declines could mean that the quality of education has gone down for all students in the past decade, or they could also reflect the expansion of education to more marginalised populations.

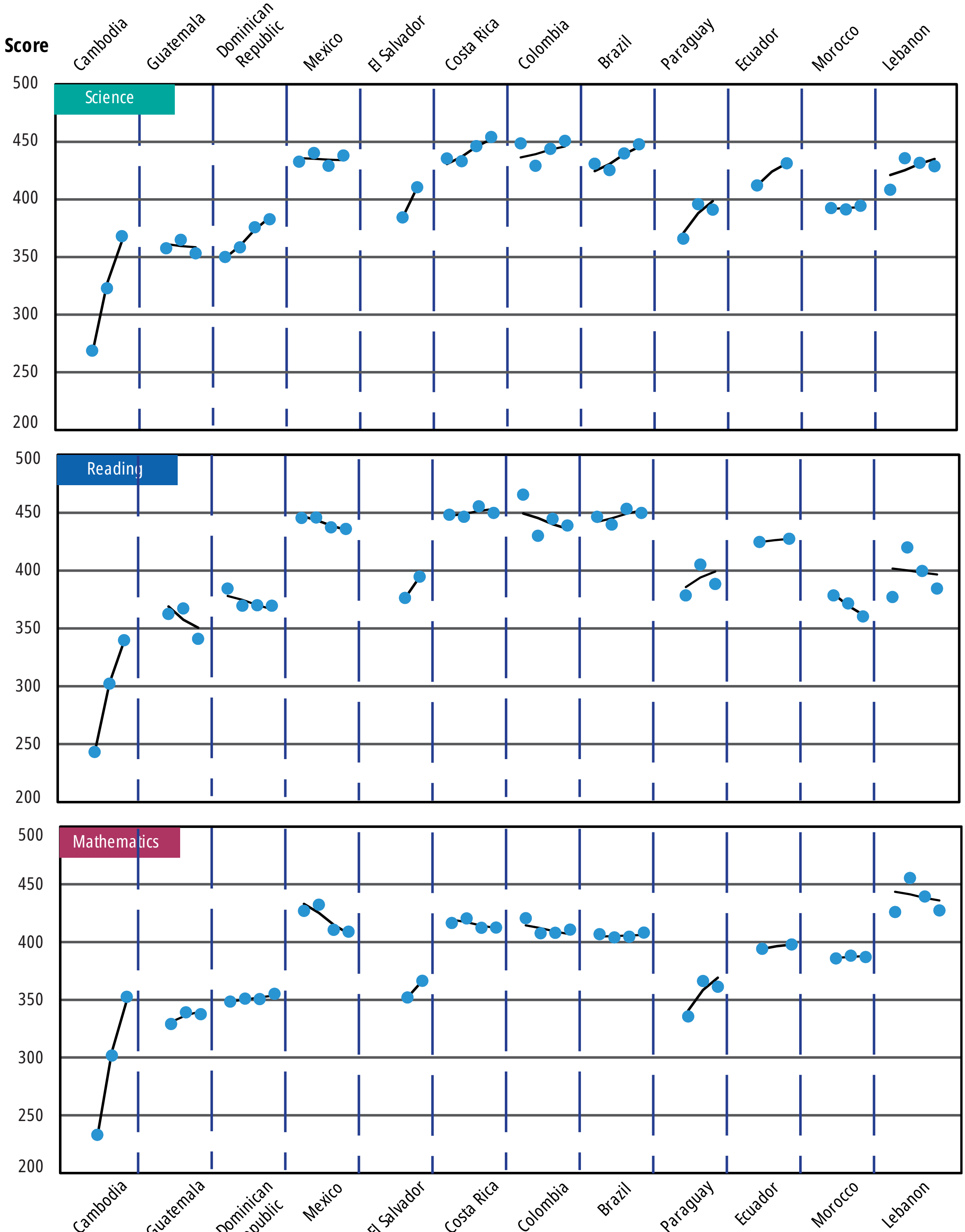
The expansion of education systems is also reflected in PISA data: in all of the 12 countries where fewer than two in three 15-year-olds were eligible to participate in past PISA assessments, there is now an increased share of 15-year-olds eligible for the test relative to all the 15-year-olds in the country. Most notably, over the past decade, Cambodia, Ecuador, El Salvador, Lebanon, Morocco and Paraguay saw increases between 11 and 24 percentage points in the PISA coverage – the proportion obtained by dividing the number of PISA-eligible students by the total number of 15-year-olds in a country[8].

However, this expansion in education opportunities makes it more difficult to interpret how mean scores in PISA have changed over time. Increases in the share of PISA-eligible students relative to all 15-year-olds can lead to an underestimation of the real improvements education systems have achieved. Household surveys often show that children from poor households, rural areas or ethnic minorities have a greater chance of not attending or completing lower secondary education (GEM Report UNESCO, 2015[21]) Typically, as populations that had previously been excluded gain access to higher levels of schooling, a larger proportion of low-performing students would be included in PISA samples (Avvisati, 2017[22]).

Of the countries in which PISA coverage increased markedly since 2015, only Cambodia, the Dominican Republic and El Salvador saw improvements in performance in at least one subject by 2025. Among those with a longer record of participation, mean performance in science remained stable in Colombia, Costa Rica and Mexico, although it decreased in reading or mathematics (or both) over this period (Tables I.B1.2a.36, I.B1.2a.37 and I.B1.2a.38). Only in Brazil, performance remained stable in the three domains since 2015, while coverage increased by four percentage points.

Figure I.2.8. Linear trend in the minimum score attained by at least 25% of 15-year-olds since 2015

Selected countries; 2015, 2018 or 2022 to 2025



Notes: Only countries and economies whose Coverage Index 3 (CI3) was below 66.6% in 2015, 2018 or 2022 are included in the figure.
Dotted trend-lines indicate non-significant trends over the period considered.
Countries and economies are ranked in ascending order of the percentage of 15-year-olds covered by the PISA sample (CI3) in 2025.
Source: OECD, PISA 2025 Database, Tables I.B1.2a.48, I.B1.2a.49 and I.B1.2a.50. See https://stat.link/xgs41b for the underlying data.

Do declines mean that the quality of education has gone down for all students in the past decade, or do they reflect the expansion of education to more marginalised populations? By considering a population equal in size to 25% of an age group made up of only the best-performing students in a country, it is possible to monitor the rate of change in PISA performance for a sample of 15-year-olds that was only indirectly affected by changes in coverage rates over a given period, but whose composition remained unchanged. Most likely, all members of this group would have been eligible to participate in PISA even in the counterfactual situation of no educational expansion. This analysis offers a different interpretation of many of these countries' results.

In Cambodia, minimum scores for 25% of top-performing 15-year-olds increased over this period in all three subjects. In Paraguay, minimum scores for 25% of top-performing 15-year-olds increased in science and mathematics and remained stable in reading. In Costa Rica, minimum scores for 25% of top-performing 15-year-olds increased over this period in science and remained stable in reading and mathematics. Moreover, in Guatemala and Morocco, minimum scores for 25% of top-performing 15-year-olds remain unchanged in at least two domains, and only in one in Mexico (Tables I.B1.2a.48, I.B1.2a.49 and I.B1.2a.50).

In sum, among the seven countries that increased participation in secondary education over the 2015-2025 period and for which performance change data are available, mean scores improved in all subjects in Cambodia, in two subjects in the Dominican Republic and in one in El Salvador; dropped in all subjects in Guatemala, and in at least one subject in the remaining four (Costa Rica, Mexico, Morocco and Paraguay). In these systems, the decline in mean scores is likely linked to the integration of more 15-year-olds from marginalised populations into schooling. PISA results show that in at least three of these education systems, performance did not deteriorate and that expanding secondary education to more marginalised students was not necessarily accompanied by lower performance among their higher-performing peers.

Box I.2.4. Do literacy skills continue to develop after age 15? Evidence from PISA and PIAAC

PISA offers a snapshot of 15-year-old students' proficiency in science, reading and mathematics. But students' skills do not stop developing at age 15. They may be strengthened through further education, training and work, or they may weaken if there are fewer opportunities to keep using and developing them.

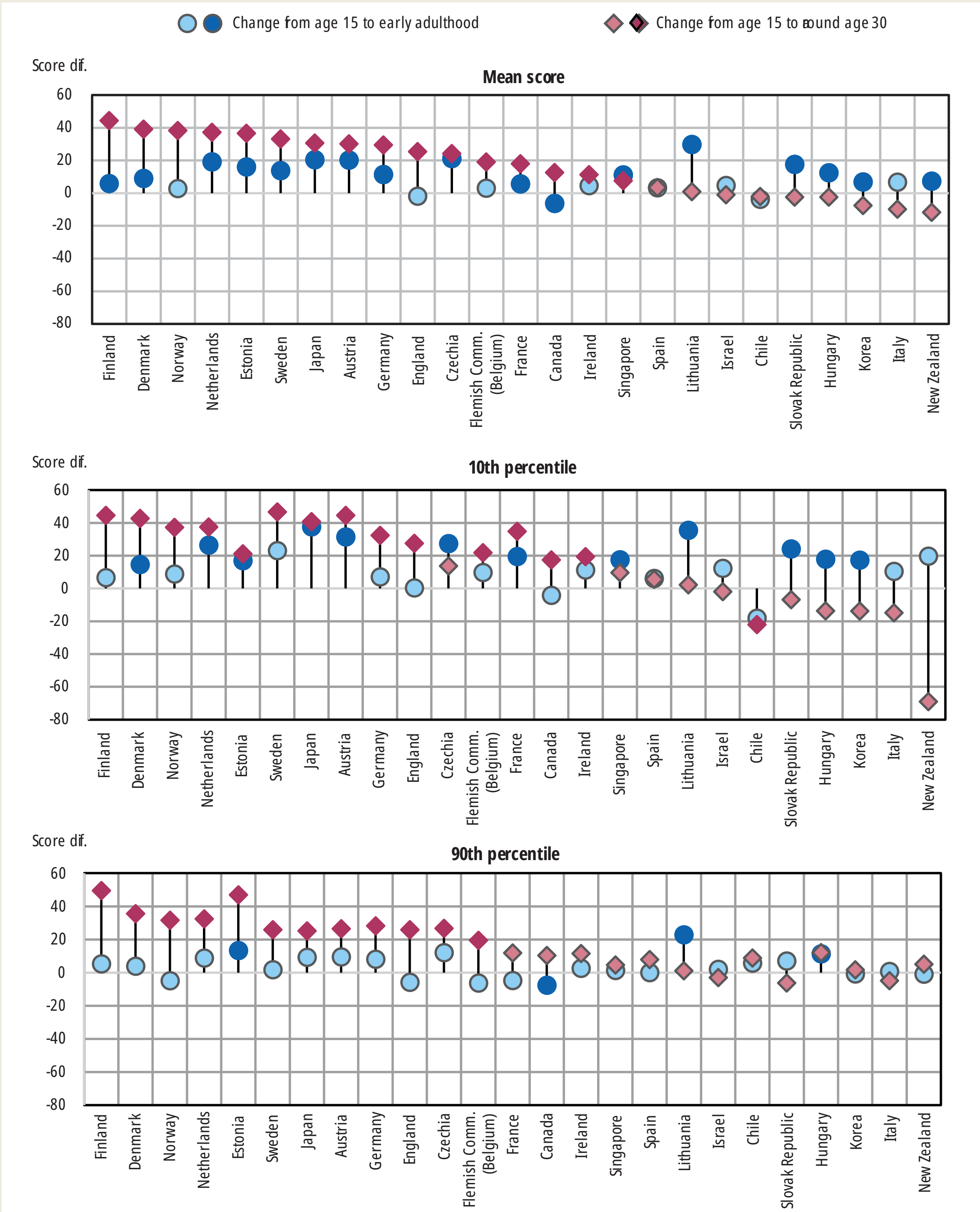
The OECD Survey of Adult Skills, a product of the Programme for the International Assessment of Adult Competencies (PIAAC), makes it possible to examine this longer trajectory. While PISA assesses 15-year-old students, PIAAC assesses 16- to 65-year olds' literacy, numeracy and problem-solving skills in everyday and work-related contexts. Looking at PISA and PIAAC together provides a broader view of how foundational skills evolve from adolescence into young adulthood (OECD, 2026[23]).

This box focuses on literacy. It follows the broad logic of analyses comparing PISA cohorts with later PIAAC results. The aim is not to track the same individuals over time, but to assess comparable groups of people born around the same years. In practice, this means comparing the PISA 2009 cohort with adults born in 1992-94 who were later assessed in PIAAC. The analysis therefore compares people from similar birth cohorts at three broad stages: age 15, early adulthood and around age 30.[9]

Because PISA reading and PIAAC literacy are reported on different scales, the PISA reading scores in this analysis are expressed in PIAAC literacy score points (Borgonovi et al., 2017[24]). This makes the results easier to interpret: differences can be read as approximate changes in literacy proficiency between age 15 and young adulthood. However, these results should still be interpreted with caution. PISA and PIAAC differ in their target populations, testing settings and assessment designs, and these differences may affect results.

Figure I.2.9. Performance change in literacy from age 15 to young adulthood

Change in literacy scores using PISA 2009 scores converted to the PIACC literacy scale



Notes: Only countries and economies with available data are shown.
The PIAAC samples are restricted to young adults born in 1992, 1993 and 1994, and exclude foreign-born individuals who arrived in the test country at age 15 or older. This restriction helps ensure that the PIAAC respondents are more comparable to the students who were assessed in PISA in 2009.
Countries and economies are sorted by the performance gap between PISA 2009 mean reading scores and PIAAC Cycle 2 (2023) mean literacy scores.
Source: PISA and PIAAC databases. See https://stat.link/xgs41b for the underlying data.

Figure I.2.9 shows mean literacy performance for the PISA 2009 cohort at age 15 and for comparable cohorts assessed during early adulthood and around age 30. Three broad patterns emerge. In one group of countries and economies, mean literacy proficiency appears progressively higher across cohorts through age 30. This group includes Austria, Canada*, Czechia, England (United Kingdom), Estonia, the Flemish Community (Belgium), France, Germany, Ireland, Japan, the Netherlands*, Singapore and Nordic countries such as Denmark, Finland, Norway* and Sweden. In the Flemish Community (Belgium), England (United Kingdom), Ireland and Norway*, gains appear particularly marked around age 30 (Figure I.2.9). In other countries, such as Austria, Czechia, Japan and Singapore, literacy also is higher in the cohorts assessed after age 15, but the pace of improvement seems to be slower in later young adulthood.

A second group shows a different trajectory. In these countries, literacy scores are higher for cohorts assessed shortly after the age at which students take PISA, but estimates for those assessed at a later stage are close to those observed at age 15, or below them. This pattern is visible in Hungary, Korea, Lithuania, New Zealand* and the Slovak Republic, where mean literacy performance around age 30 is similar to that estimated for the PISA 2009 cohort.

Finally, in Chile, Israel, Italy and Spain, mean literacy scores show no significant overall change compared with the PISA 2009 level.

Looking beyond mean scores shows that changes in estimated literacy performance across life stages can differ substantially across the score distribution.[10] In Austria, Denmark, England (United Kingdom), Estonia, Finland, the Flemish Community (Belgium), Germany, Japan, the Netherlands*, Norway* and Sweden, literacy gains are observed across all levels of performance. In Estonia, gains appear larger at the top end of the distribution.

In Chile, more than 10% of young adults had literacy scores, around age 30, that would have placed them in the bottom decile, among 15-year-olds in 2009 – suggesting that literacy skills may have declined after age 15 for many of the lower-performing students as they entered adulthood.

Among countries where mean literacy performance at later life stages is close to the original PISA level, this trajectory can reflect shares of low-performing adults that increase with age, rather than a uniform shift across performance levels. In Hungary and Korea, for example, the score below which only 10% of adults score was markedly lower around age 30 than for the cohort representing early adulthood, while higher-performing adults continued to reach high scores (Figure I.2.9). In Lithuania and the Slovak Republic, scores dropped at several points of the distribution up to the score below which 75% of adults score, indicating that the decline extended across much of the performance distribution rather than being confined to the lowest-performing adults.

These patterns suggest that literacy skills after age 15 are not fixed. In some systems, young adults continue building on the skills measured by PISA, while in others early gains are not sustained. The contrast between lower- and higher-performing adults is also important. Where the literacy levels of lower performers decline with age, skill differences widen in the years after compulsory schooling. This points to the importance of upper secondary and tertiary education, but also of vocational education and training pathways, adult learning and early labour-market experiences, in helping young people maintain and develop the literacy skills they acquired in school.

Equity in education in PISA 2025

The analyses above show that changes in average performance often conceal important shifts in the distribution of achievement, especially at the lower end. At the same time, mean performance remains an important part of equity in education: an education system cannot be considered fully equitable if most students perform at low levels, even when differences between social groups are small. To understand whether differences in outcomes reflect inequalities in learning opportunities, it is therefore necessary to examine how performance is associated with students' social and educational backgrounds, while keeping the overall levels of achievement in view.

Equity is a fundamental value and a central goal of education policy. From a social justice perspective, it reflects the principle that all individuals, regardless of their background, should have the opportunity to fulfil their potential. From an economic and societal perspective, it also matters because education systems are stronger when they enable all learners to develop their capabilities, rather than allowing talent and potential to go unrealised. From a global policy perspective, it is also embedded in the 2030 Agenda for Sustainable Development, particularly in Sustainable Development Goal 4, which calls for "inclusive and equitable quality education" for all, and in Target 4.5, which aims to eliminate disparities in education and ensure equal access for vulnerable groups. In addition, Target 4.1 underscores the importance not only of access, but also of ensuring that all girls and boys equitably achieve relevant and effective learning outcomes (United Nations, 2015).

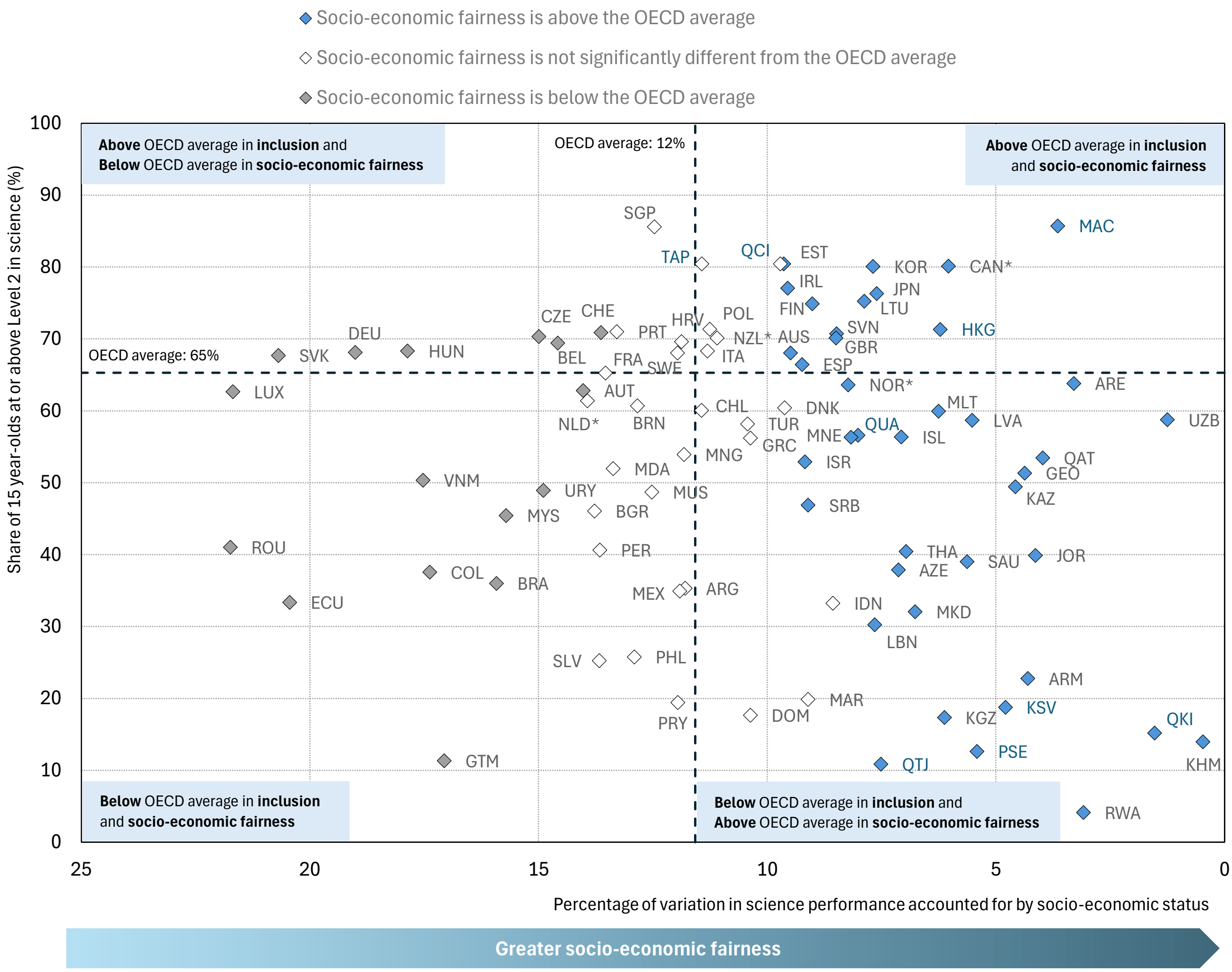
Yet achieving genuine equity remains one of the most complex challenges facing school systems today. Although global expansions in schooling over the past century have dramatically increased access to education, socio-economic inequalities in learning outcomes have proven remarkably persistent (Chmielewski, 2019[25]; Pfeffer, 2008[26]). Equity is understood, first of all, as an ethical imperative to ensure that personal or social circumstances – factors over which students have no control – do not dictate their opportunity to fulfil their academic potential (OECD, 2023[3]). But equity also requires that this potential be realised at meaningful levels of learning: reducing disparities is not sufficient if students from all backgrounds are left with weak skills.

This section analyses two key dimensions of equity in education: inclusion and fairness. Only education systems that combine high levels of both are considered highly equitable. Fairness refers to the extent to which all students are given the opportunity to realise their full learning potential, irrespective of their background. Inclusion, in PISA, refers to whether all young people have access to quality education and acquire at least the baseline skills needed to continue learning to achieve their potential and fulfil their aspirations. However, baseline proficiency should be understood as a minimum threshold, not as the endpoint of equity. This is why the equity indicators discussed in this section need to be read alongside the earlier results on mean performance: an education system in which most students reach only baseline proficiency, or in which performance is uniformly low regardless of background, would not represent the full ambition of equity. Equity requires both broad access to foundational skills and meaningful opportunities for students from all backgrounds to progress towards higher levels of achievement.

Inclusion, fairness and equity in education

In PISA 2025, only education systems that combine high levels of both inclusion and fairness are considered equitable. Inclusion is measured by the percentage of 15-year-olds who are at or above proficiency Level 2 in at least one subject (as will be discussed, this reflects the assumption that 15-year-olds not covered by the PISA sample would score below Level 2).[11] Fairness is measured by the percentage of variance in science performance accounted for by student socio-economic status. Figure I.2.10 shows countries and economies according to their levels of inclusion and fairness in science.

Figure I.2.10. Strength of the socio-economic gradient and share of 15-year-olds at or above proficiency Level 2 in science



Notes: Only countries and economies with available data are shown. Please refer to the Reader's Guide for countries' and economies' ISO codes.
Socio-economic status is measured by the PISA index of economic, social and cultural status.
Source: OECD, PISA 2025 Database, Tables I.B1.2a.45 and I.B1.2b.2. See https://stat.link/xgs41b for the underlying data.

In 18 out of the 28 countries and economies that had a level of inclusion above the OECD average (i.e. more than 65% of 15-year-olds scored at or above proficiency Level 2 in science), the level of fairness by socio-economic status was also significantly above the OECD average (i.e. less than 12% of the variance in science performance was accounted for by student socio-economic status). Education systems in B-S-J-Z (China), Canada*, Estonia, Ireland, Japan, Korea, Lithuania, and Macao (China) achieved high levels of both inclusion (over 75%) and fairness (under 10% variance). Importantly, these systems did so while also attaining strong overall outcomes: the average score in science, reading and mathematics was higher than the OECD average (except in Lithuania, where the mean score in reading was not statistically significantly different from the OECD average). While these results do not imply that equity causes higher performance, they indicate that many systems that are most successful in limiting low performance and reducing socio-economic disparities also tend to be systems where overall achievement is strong. They can therefore be considered highly equitable (Tables I.B1.2a.45 and I.B1.2b.2).

These results show that high levels of equity are not incompatible with strong overall performance; on the contrary, some education systems demonstrate that it is possible to combine broad inclusion, weak socio-economic disparities and high achievement across subjects. This distinction is important. An education system in which most students reach only baseline proficiency, or in which performance is uniformly low regardless of background, would not represent the full ambition of equity. Equity requires that students from all backgrounds have access to foundational skills and meaningful opportunities to advance towards higher levels of achievement.

Inclusive education

In PISA, educational inclusion is assessed through two complementary measures: the extent to which all young people secure access to schooling – i.e. the share of 15-year-olds who are enrolled in school and represented in the assessment – and the extent to which students attain at least a baseline level of proficiency in core subjects such as science, reading and mathematics by the age of 15 (OECD, 2016[2]). This measure combines aspects related to the "quantity" of schooling (i.e. the share of 15-year-olds who are enrolled in school) with measures of the "quality" of education outcomes (i.e. the share of students who scored at least at the minimum level of proficiency).

Inclusion is particularly important for students from socio-economically disadvantaged or otherwise marginalised backgrounds. These students often face multiple risk factors that make them especially vulnerable to low proficiency levels and early school withdrawal (De Witte et al., 2013[27]; OECD, 2016[2]). In practice, a truly inclusive education system ensures that the vast majority of young people are not only enrolled in school, but also acquire essential baseline cognitive skills.

Expanding school participation without improving learning outcomes is not sufficient for economic and social success. Comprehensive assessments of educational inclusion must therefore consider both school enrolment and the acquisition of essential cognitive skills, so that young people are not left behind.

Baseline proficiency should therefore be understood as a minimum threshold, not as the endpoint of equity. An education system that enables most students to reach Level 2, but does not provide equal opportunities for students from all backgrounds to progress further, cannot be considered fully equitable. Equity requires both broad access to foundational skills and the opportunity for all students to develop their potential beyond the baseline.

Percentage of 15-year-olds enrolled in school (coverage of education systems)

Access to schooling does not in itself guarantee that students will acquire the knowledge and skills needed to participate fully in contemporary societies, but it is, of course, a necessary precondition for educational inclusion. Access is reflected most directly in the extent to which 15-year-olds are still enrolled in school, while early school leaving and marked delays in grade progression signal weaker inclusion.

These indicators matter because students who leave school early are less likely to fully benefit from the educational, social and labour-market advantages associated with continued participation in education, and because school dropout is shaped by a combination of individual, family, school and institutional factors (Spaull and Taylor, 2015[28]; Hanushek and Woessmann, 2008[29]). Education systems with broader school coverage at age 15 and lower levels of early school leaving or severe delay can therefore be regarded as more inclusive.

While PISA is not designed to estimate enrolment rates directly, it provides a range of indices that capture the coverage of the population of 15-year-olds enrolled in Grade 7 or above in each country and economy. Low values of the proportion of 15-year-olds in each country/economy covered by the PISA sample (Coverage Index 3) may reflect 15-year-olds who are no longer enrolled in school or who have been held back in primary school. This index may also be reduced by student exclusions from the PISA assessment and by dropout during the school year.

Coverage Index 3 ranges from 32% in Rwanda and 43% in Cambodia to 90% or more in 34 countries and economies (see Annex A2). While PISA results are representative of the target population in all adjudicated countries and economies, they cannot be readily generalised to the entire population of 15-year-olds in countries where many young people of that age are not enrolled in lower or upper secondary school.

Coverage is only one component of inclusion. The next question is whether students who remain in school also acquire the minimum competencies needed to participate fully in society.

Basic proficiency in science, reading and mathematics

In this chapter, low performance has been examined separately in science, mathematics and reading. Yet low achievement is often cumulative: students who do not attain baseline proficiency in one domain are at heightened risk of falling below baseline in others. A fuller account of low performance therefore requires attention not only to subject-specific rates, but also to the overlap in low performance across domains, especially the share of students who fail to reach baseline proficiency in all three subjects (OECD, 2023[3]).

At the same time, the results presented so far describe only the 15-year-olds covered by the PISA 2025 target population and sample. In some participating countries and economies, however, a non-trivial share of 15-year-olds was not represented in the assessment. Incomplete coverage can affect how national skill distributions are interpreted, particularly where school attendance at age 15 is not universal.

Because the achievement of 15-year-olds not covered by PISA is not directly observed, their likely position in the skills distribution must be estimated indirectly. Evidence on PISA sample eligibility suggests that students excluded from the sampling frame are often out of school or severely over-age for grade, and that ignoring these groups can lead to an underestimation of both the prevalence of low skills and the extent of inequality in the broader youth population (Spaull, 2017[30]).

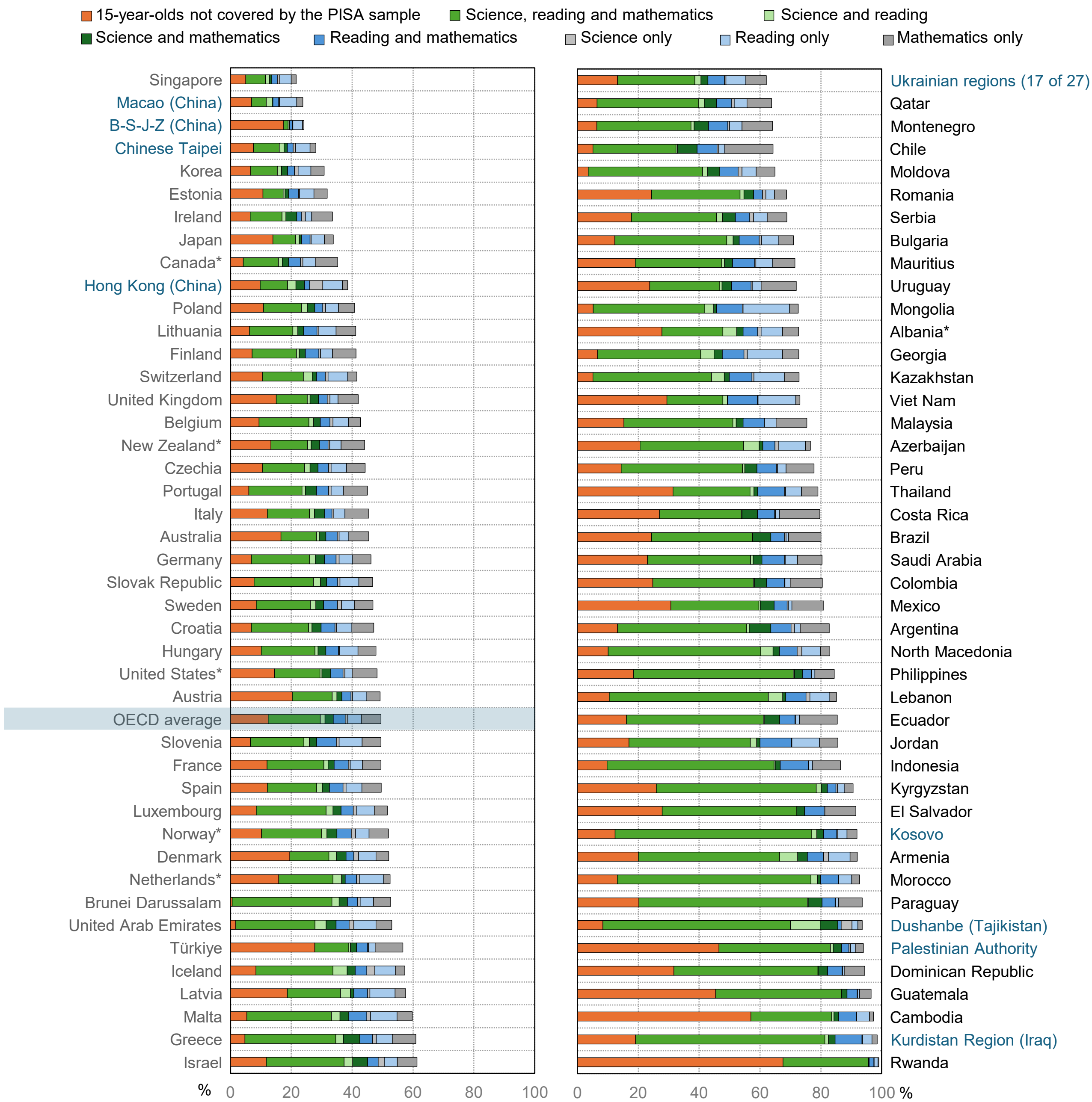
More broadly, the literature shows that educational exclusion and early school leaving are associated with clusters of disadvantage rather than a single risk factor, and that school dropout reflects interacting individual, family, school and system-level processes (De Witte et al., 2013[27]; Gubbels, van der Put and Assink, 2019[31]). In low- and middle-income settings, combining data on educational attainment with data on cognitive outcomes further suggests that limited access and weak learning outcomes frequently accumulate among the same groups of young people (Spaull and Taylor, 2015[28]).

Rather than attributing an exact score to these 15-year-olds, it is possible to estimate lower and upper bounds for most results of interest, including the mean score, the median score and other percentiles, or the proportion of 15-year-olds reaching minimum levels of proficiency (Avvisati, 2017[22]). Under a best-case scenario, where the distribution of reading, mathematics and science skills among the population not covered by the sample is assumed to be the same as that of the covered population, the estimates of mean scores and percentiles derived from PISA samples represent an upper bound on the mean, percentiles and proportions of students reaching minimum proficiency in the entire population of 15-year-olds. A lower bound can be estimated by assuming a plausible worst-case scenario, such as that all 15-year-olds not covered by the sample would score below a certain point in the distribution. For example, if all of these 15-year-olds were assumed to score below Level 2, then the lower bound on the proportion of 15-year-olds reaching minimum levels of proficiency would simply be the corresponding proportion observed in the PISA target population multiplied by Coverage Index 3.

Figure I.2.11 presents the proportion of 15-year-olds reaching minimum levels of proficiency under the assumption that all 15-year-olds not covered by the PISA sample would score below Level 2 in each subject.[12] In the figure, 15-year-olds are grouped according to whether they scored below the baseline level of proficiency in one subject only, in two subjects, or in all three core PISA subjects (science, reading and mathematics), as well as those not covered by the PISA sample, who are assumed to be low performers in all three subjects. The figure shows that all countries and economies that participated in PISA 2025 – even those with the highest levels of performance and equity – have a sizeable share of low performers.

Figure I.2.11 Overlap of low performers in science, reading and mathematics among all 15-year-olds

Percentage of students who score below proficiency Level 2



Notes: Only countries and economies with available data are shown.

15-year-olds not covered by the PISA sample are 15-year-olds who are not enrolled in school; or who are in school but in Grade 6 or below, or who were excluded from the PISA sample due to student or school-level exclusions.

Countries and economies are ranked in ascending order of the total percentage of students who are low performers in at least one subject.

Source: OECD, PISA 2025 Database, Tables I.A2.1 and I.B1.2a.24. See https://stat.link/xgs41b for the underlying data.

The largest category of low-performing students is the group of 15-year-olds who scored below the baseline level of proficiency in all three subjects. On average across OECD countries, over one out of four students (29%) are low performers in science, reading and mathematics. This percentage includes both students who took the PISA test and

15-year-olds not covered by PISA, who account for 12% of the age cohort on average across OECD countries. In 18 countries and economies, more than 60% of 15-year-olds are low performers in all three subjects.

About 1% of students across OECD countries are low performers in science only; 4% are low performers in reading only; and 6% are low performers in mathematics only. About 3% are low performers in science and mathematics but not in reading; 2% are low performers in science and reading but not in mathematics; and 4% are low performers in reading and mathematics but not in science (Table I.B1.2a.24).

Taken together, all the categories of low performers shown in Figure I.2.11 represent the share of 15-year-olds who are low performers in at least one subject, whether mathematics, reading or science, plus those outside of the PISA target population. On average across OECD countries, 49% of 15-year-olds are low performers in at least one subject, although this share varies considerably across countries. In 47 countries and economies, more than 60% of 15-year-olds scored below baseline proficiency Level 2 in at least one subject. By contrast, in three countries and economies, fewer than 25% of 15-year-olds were low performers in at least one subject (Table I.B1.2a.22).

These results underscore that educational inclusion must be judged not only by how many students remain in school, but also by how many young people acquire at least the minimum competencies needed to participate fully in society.

Fairness by student socio-economic status

A student's socio-economic status remains one of the most powerful and consistent predictors of academic achievement globally. However, the mechanisms through which family background translates into educational advantage are highly complex and multidimensional (Eriksson et al., 2021[32]). The roots of these disparities often take hold long before a child enters a formal school classroom. Research suggests that economic deprivation and adverse home conditions in early childhood can significantly hinder cognitive development and verbal ability, setting a trajectory of disadvantage that continues into adolescence and adulthood (Duncan, Brooks-Gunn and Klebanov, 1994[33]; Richards and Wadsworth, 2004[34]).

As students progress through school, disparities in resources can impact their academic progress. Socio-economically advantaged students typically benefit from greater financial, social and cultural backgrounds (Paino and Renzulli, 2012[35]; Kao and Thompson, 2003[36]; Eriksson et al., 2021[32]; Coleman, 1988[37]; Bourdieu, 2018[38]). This makes it easier for them to succeed in school compared to students from families with lower levels of education or that are affected by chronic unemployment, low-paid jobs or poverty. Consequently, by the time students take the PISA test at age 15, a distinct socio-economic gradient can be observed, a measurable relationship demonstrating how deeply family background relates to educational outcomes within a given school system (Willms, 2006[39]).

However, socio-economic disadvantage does not determine academic success. Some disadvantaged students perform well despite adversity, demonstrating remarkable academic resilience (“resilient students”) and performing at the highest levels both nationally and internationally (OECD, 2011[40]). This section first examines socio-economic disparities in recent PISA results through the slope and strength of the socio-economic gradient across countries and economies, before looking at low performance and academic resilience.

PISA-participating countries and economies vary markedly in their levels of wealth and per-capita income (see Table I.B3.2.1), translating into differences in the socio-economic status of the students who take the PISA test. The average socio-economic status of students in each country and economy that participated in PISA 2025, is measured by the PISA index of economic, social and cultural status (ESCS) (see Annex A3 for a detailed definition of this index).

The socio-economic gradient in student performance

In PISA, the socio-economic gradient is used to examine the relationship between students’ socio-economic status and student performance in each country and economy whereby a stronger association means less fairness (thus, less equity) (Willms, 2006[39]). The socio-economic gradient offers two key pieces of information: the strength and the slope of the gradient.

The strength of the gradient is measured by the proportion of the variation in student performance that is accounted for by differences in student socio-economic status. When the relationship between socio-economic status and performance is strong, socio-economic status is a good predictor of performance. Meanwhile, the slope of the socio-economic gradient indicates the degree of the disparity in average performance between two students whose socio-economic status differs by one unit in the PISA ESCS index. A positive value for the slope of the socio-economic gradient signals that advantaged students generally performed better than disadvantaged students.

On average across OECD countries in 2025, students' socio-economic status accounts for a significant share of the variation in their performance in PISA. PISA data show that 12% of the variation in science performance within each country is associated with socio-economic status, on average. In Ecuador, Luxembourg, Romania, the Slovak Republic and Zambia, out of the 90 countries and economies with available data, students' socio-economic status accounts for 20% or more of the variation in performance (Table I.B1.2b.2). By contrast, students' socio-economic status accounts for less than 7% of the variation in performance in 23 other countries and economies.

While a weak association between student socio-economic status and performance within countries/economies is necessary for achieving fairness in education, it is not, in itself, a sufficient condition. It is also important to consider fairness in terms of education systems' overall levels of performance. A country/economy that combines high levels of fairness in terms of student socio-economic status with low mean performance – indicating poor achievement across the board, regardless of students' socio-economic status – should not be viewed as a desirable outcome.

As shown in Figure I.2.12, in many cases, countries and economies with higher levels of fairness by socio-economic status are not necessarily those with strong student performance. Similar to what is observed in science, differences in students' socio-economic status account for 9% of the variation in reading and 12% of the variation in mathematics performance on average across OECD countries (Tables I.B1.2b.3 and I.B1.2b.4).

Another way to describe socio-economic disparities is to examine the score difference associated with a given increase in socio-economic status. On average across OECD countries in 2025, a one-unit increase in the PISA index of economic, social and cultural status is associated with an increase of 36 score points in the science assessment (Table I.B1.2b.2). This is almost twice what 15-year-old students typically learn in a year (see Box I.2.2).[13]

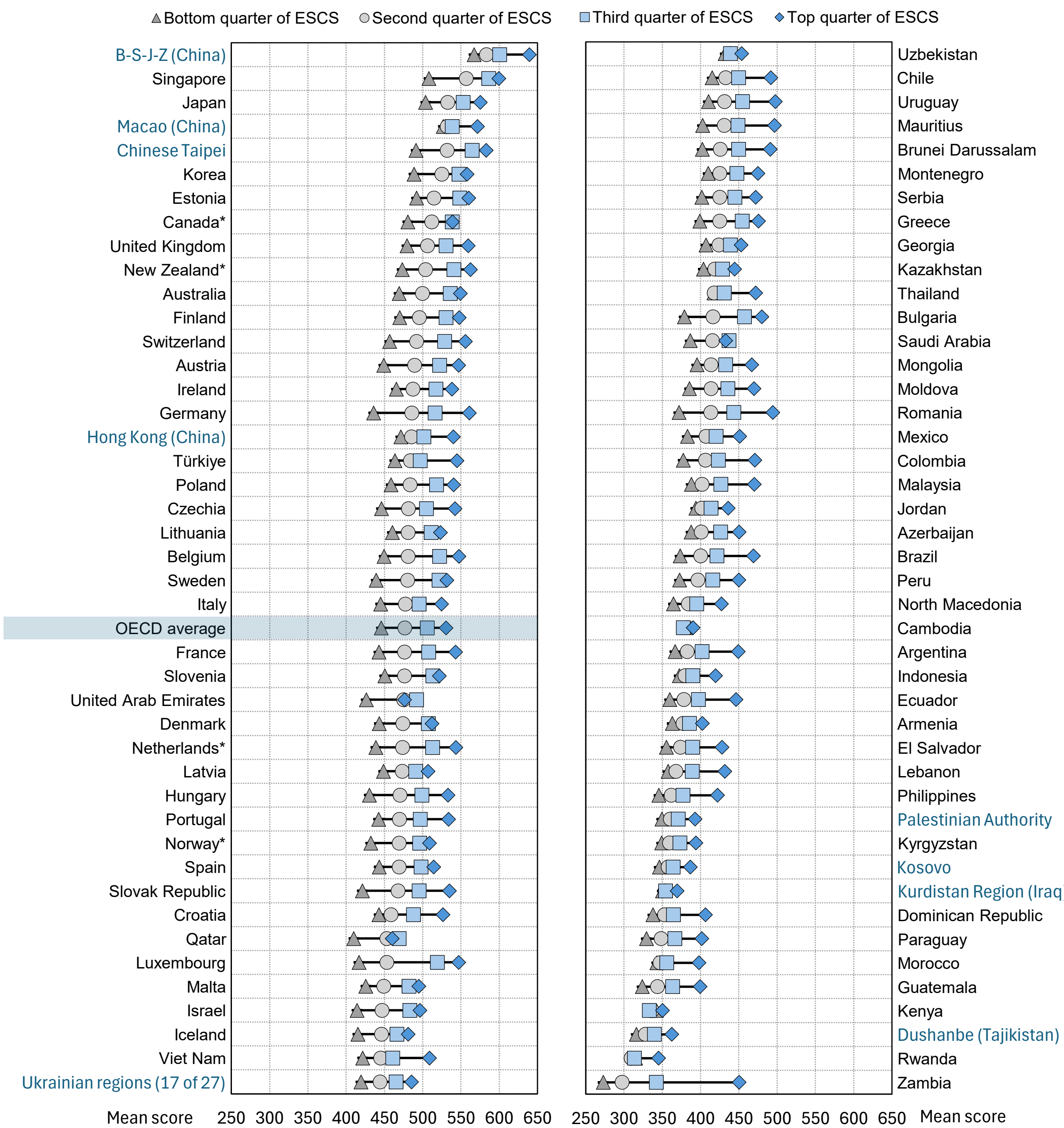
The performance gap related to students' socio-economic status is widest in the Slovak Republic, where a one-unit increase in the index is associated with a difference of 48 score points in science. In Germany, Luxembourg and Zambia, the increase in the index is associated with a difference between 45 and 47 score points. By contrast, the associated change in performance amounts to less than 20 score points in 18 countries and economies. While the slope varied between countries/economies, in all countries/economies participating in PISA 2025, more-advantaged students performed better than more disadvantaged ones, with the sole exception of Kenya (Table I.B1.2b.2).

As for science, the performance gap related to students' socio-economic status (a one-unit increase in the index) is 32 score points for reading, and 35 score points in mathematics, on average across OECD countries (Tables I.B1.2b.3 and I.B1.2b.4).

However, socio-economic gradients do not give information about the size of performance gaps related to differences in socio-economic status between the most and least advantaged students within a country/economy. This metric is shown, instead, by the mean performance of students belonging to the top and bottom quarters of socio-economic status in a country/economy, as presented in Figure I.2.12.

Figure I.2.12. Performance in science, by national quarters of socio-economic status

Mean score in science, by national quarters of the PISA index of economic, social and cultural status (ESCS)



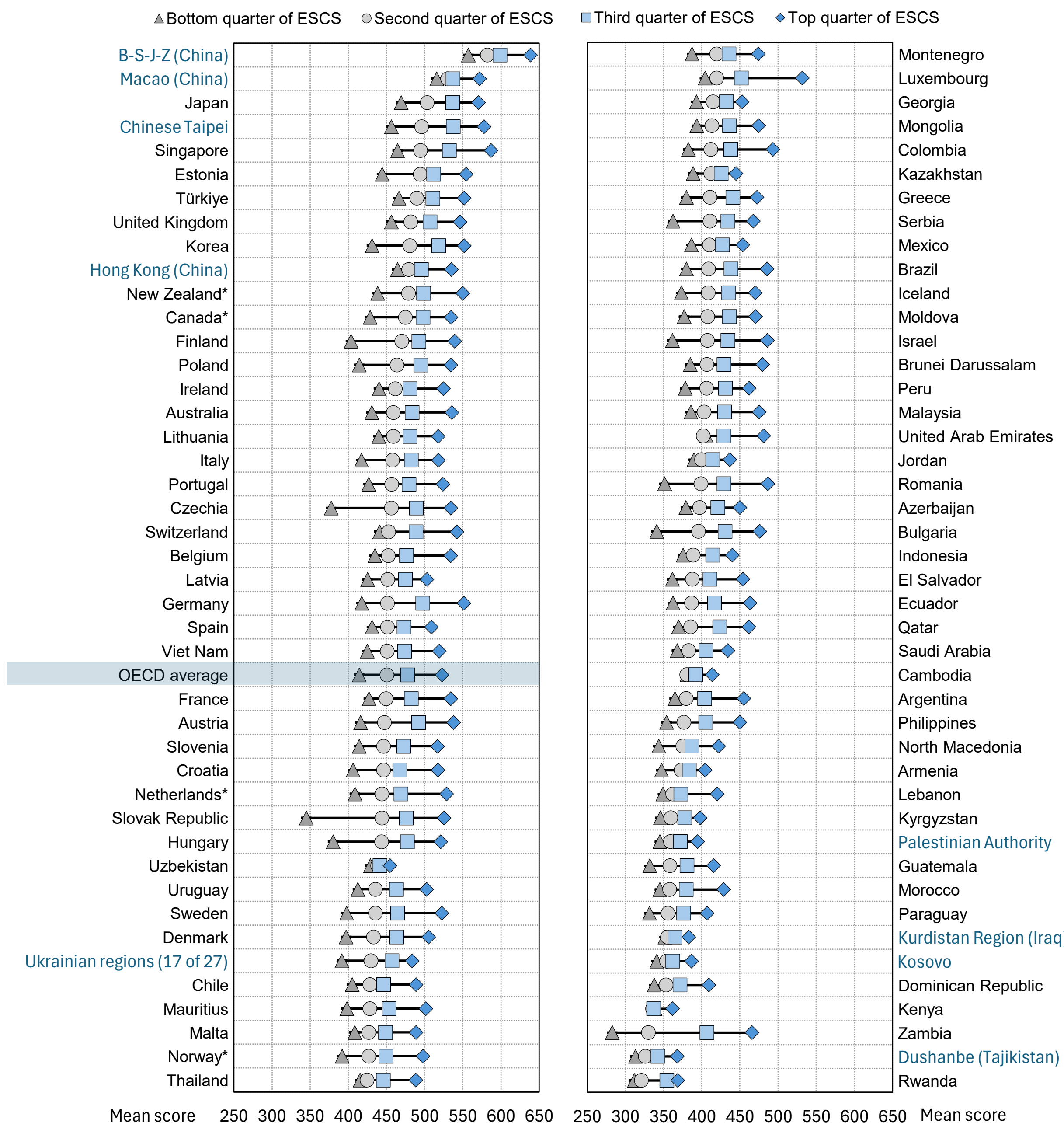
Note: Only countries and economies with available data are shown.
Countries and economies are ranked in descending order of science performance for students in the second quarter of national socio-economic status.
Source: OECD, PISA 2025 Database, Table I.B1.2b.2. See https://stat.link/xgs41b for the underlying data.

On average across OECD countries, socio-economically advantaged students (those in the top quarter of the distribution in the ESCS index in their country/economy) scored 85 points more in science than disadvantaged students (those in the bottom quarter of the distribution in their country/economy) (Table I.B1.2b.2). The gap between these two groups of students is higher than 85 score points in 25 countries or economies while the gap is under

50 points in 17 countries or economies. In Bulgaria, Germany, Hungary, Luxembourg, the Netherlands*, Romania, the Slovak Republic and Zambia, the gap between socio-economically advantaged and disadvantaged students is the highest, exceeding 100 score points.

Figure I.2.13. Performance in science, by international quarters of socio-economic status

Mean score in science, by international quarters of the PISA index of economic, social and cultural status (ESCS)



Note: Only countries and economies with available data are shown

Countries and economies are ranked in descending order of science performance for students in the second quarter of international socio-economic status.

Source: OECD, PISA 2025 Database, Table I.B1.2b.11. See https://stat.link/xgs41b for the underlying data.

As for science, socio-economically advantaged students scored 77 points more in reading and 83 score points more in mathematics, than disadvantaged students, on average across OECD countries (Tables I.B1.2b.3and I.B1.2b.4).

A complementary way to examine socio-economic gaps is to place all PISA students on a common international socio-economic scale, rather than defining advantage and disadvantage separately within each country or economy. This shows a similar overall pattern: in all participating countries and economies with available data, students in the highest international quarter of socio-economic status perform better in science than students in the lowest international quarter (Figure I.2.13). Socio-economic disparities in science performance are therefore visible whether socio-economic status is measured within countries/economies or on a common international scale.

These average gaps provide an important summary of socio-economic disparities in performance, but they do not show how disadvantage is linked to the risk of low achievement or, conversely, the extent to which some disadvantaged students succeed despite adversity. These questions are examined next.

Changes in socio-economic disparities

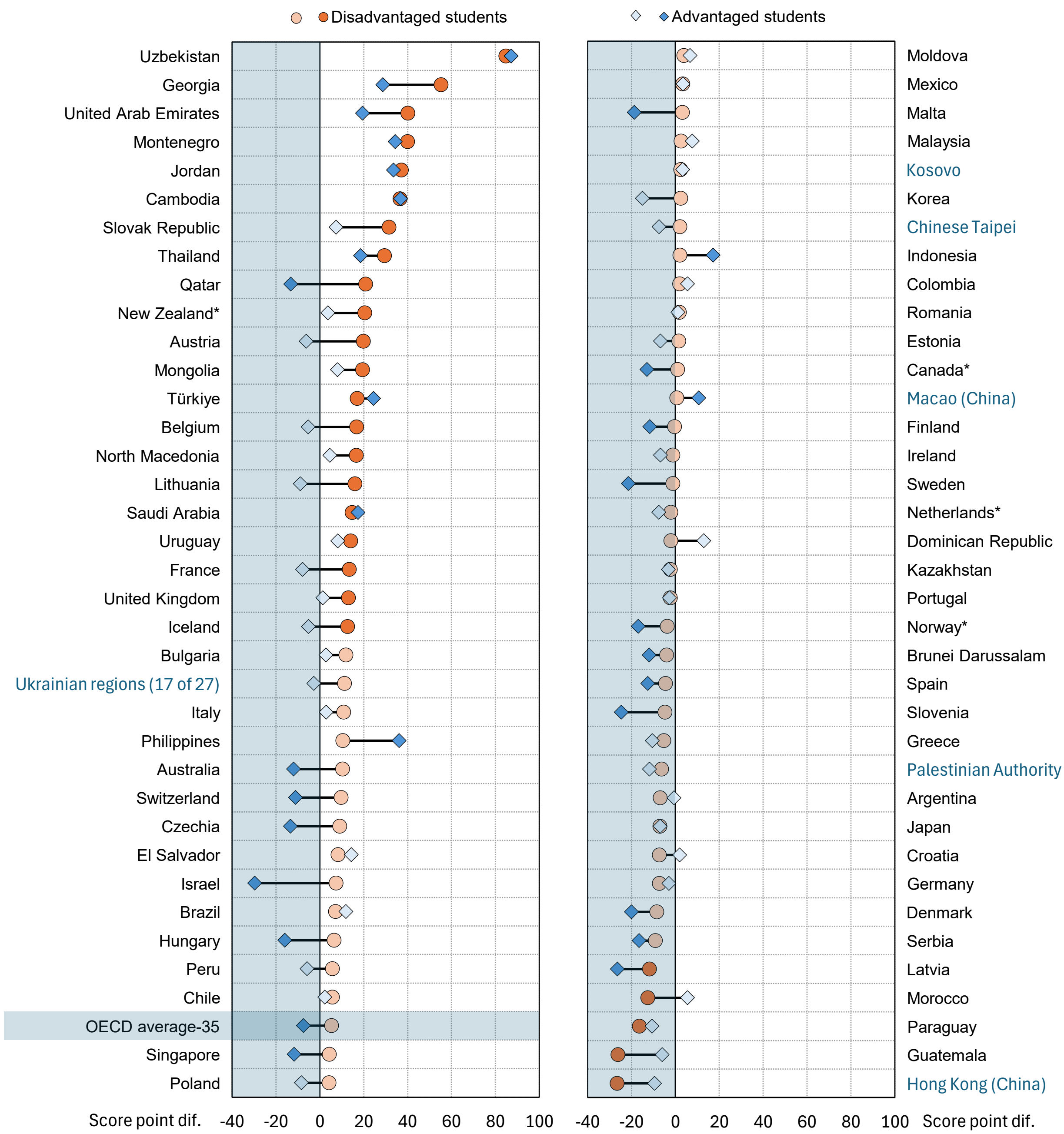
The strength in the relationship between science performance and socio-economic status has decreased across OECD countries (Table I.B1.2b.25). Across participating countries in PISA 2025, the strength of the relationship only increased in Indonesia, Macao (China) and the Philippines. Likewise, the strength in the relationship between both reading and mathematics performance and socio-economic status has also decreased across OECD countries (about 4 percentage points). As will be discussed next and shown in Figure I.2.14, in a number of systems, the reasons behind these decreases are possibly related to a decline in academic performance among socio-economically advantaged students while performance remained mostly unchanged among their more disadvantaged peers.

Changes in socio-economic disparities between 2022 and 2025 can be measured by the difference in average performance in science between socio-economically advantaged and disadvantaged students (hereafter, this will be referred to as the "socio-economic gap"). A narrower socio-economic gap means there is less disparity in performance between advantaged and disadvantaged students; by contrast, a wider gap indicates greater disparity.

A shrinking socio-economic gap does not necessarily mean a fairer system that cultivates and expands the opportunities for the most disadvantaged students. A smaller socio-economic gap can result from stagnating performance among disadvantaged students while the performance of advantaged students declines. This is what is observed in science, on average across OECD countries between PISA 2022 and 2025 (Table I.2.10); the socio-economic gap has been reduced by 13 score points on average, due to declining average scores among advantaged students rather than by improvements among disadvantaged students.

Figure I.2.14. Change between 2022 and 2025 in science performance, by quarter of socio-economic status

Change in science performance by students' socio-economic status[1]



1. Socio-economic status is measured by the PISA index of economic, social and cultural status.
Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the change in mean performance in science among disadvantaged students between PISA 2022 and PISA 2025.
Source: OECD, PISA 2025 Database, Table I.B1.2b.22. See https://stat.link/xgs41b for the underlying data.

Table I.2.10. Change between 2022 and 2025 in the socio-economic gap in science performance

	Disadvantaged students	Advantaged students	Socio-economic gap		Disadvantaged students	Advantaged students	Socio-economic gap		Disadvantaged students	Advantaged students	Socio-economic gap
Israel	7	-30	**-37**	Poland	4	-8	-13	Portugal	-2	-3	0
Qatar	21	-13	**-34**	North Macedonia	17	5	**-12**	Japan	-7	-7	0
Georgia	55	29	**-27**	United Kingdom	13	1	-12	Mexico	3	3	0
Austria	20	-6	**-26**	Denmark	-9	-20	-12	Cambodia	36	37	0
Lithuania	16	-9	**-25**	Peru	6	-6	-12	Kosovo	2	3	1
Slovak Republic	31	7	**-24**	Mongolia	19	8	-11	Uzbekistan	85	87	2
Hungary	6	-16	**-23**	Finland	0	-12	**-11**	Saudi Arabia	15	17	3
Czechia	9	-13	**-22**	Thailand	29	19	-11	Moldova	4	7	3
Australia	10	-12	**-22**	Chinese Taipei	2	-8	-10	Colombia	2	5	4
Belgium	17	-5	**-22**	Bulgaria	12	3	-9	Germany	-7	-3	4
Malta	3	-19	**-22**	Estonia	1	-7	-8	Brazil	7	12	5
France	13	-8	**-21**	Spain	-4	-13	-8	Malaysia	3	8	5
Switzerland	10	-11	**-21**	Brunei Darussalam	-4	-12	-8	Paraguay	-17	-11	6
United Arab Emirates	40	19	**-21**	Italy	11	3	-8	El Salvador	8	14	6
Sweden	-1	-21	**-20**	Serbia	-9	-17	-7	Argentina	-7	-1	6
Slovenia	-5	-25	**-20**	Uruguay	14	8	-6	Türkiye	17	24	7
Iceland	13	-5	**-18**	Ireland	-1	-7	-6	Croatia	-7	2	9
Korea	2	-15	-17	Montenegro	40	34	-6	Macao (China)	1	11	10
New Zealand*	20	4	**-17**	Netherlands*	-2	-8	-6	Dominican Republic	-2	13	**15**
Singapore	4	-12	**-16**	Palestinian Authority	-6	-12	-5	Indonesia	2	17	15
Latvia	-12	-27	**-15**	Greece	-5	-11	-5	Hong Kong (China)	-27	-10	17
Ukrainian regions (17 of 27)	11	-3	-14	Jordan	37	34	-4	Morocco	-13	5	18
Canada*	1	-13	**-14**	Chile	6	2	-3	Guatemala	-26	-6	**20**
Norway*	-4	-17	**-13**	Kazakhstan	-2	-3	-1	Philippines	10	36	**26**
OECD average-35	5	-8	**-13**	Romania	2	1	-1				

Note: Only countries and economies that can compare PISA 2022 and PISA 2025 results are shown.
The socio-economic status is measured by the PISA index of economic, social and cultural status.
Statistically significant differences are shown in a darker tone (see Annex A3).
Positive change in mean performance.
Non-significant change.
Negative change in mean performance.
Countries and economies are ranked, in ascending order of the change of socio-economic gap in science performance between 2022 and 2025.
Source: OECD, PISA 2025 Database, Table I.B1.2b.22.

The performance of disadvantaged students in science remained stable between 2022 and 2025 on average across OECD countries (mean score of 447 score points) and in 47 countries/economies (Table I.B1.2b.22). Declines were observed in only 5 countries/economies (Guatemala, Hong Kong (China), Latvia, Morocco and Paraguay).

Systems that achieved greater socio-economic fairness over time are those where the performance of the most disadvantaged students improved as much, or more, than that of their most advantaged peers. As shown in Table I.2.10, disadvantaged students' performance in science improved in 21 countries/economies; and in all of these countries, the gap with their most advantaged peers either reduced or remained stable. The increase in performance ranged from 13 points (in France, Iceland and the United Kingdom) to over 40 points (in, Georgia, the United Arab Emirates and Uzbekistan). In the latter three countries, the mean score of disadvantaged students in PISA 2022 was lower than 400 points; in other words, these disadvantaged students improved their scores starting from a performance level that was very low (Table I.B1.2b.22).

Advantaged students' performance in science declined on average across OECD countries (by 8 score points) and in 18 countries/economies, most of them OECD countries. Advantaged students' performance declined in all cases by over 10 score points and by more than 20 points in 5 countries/economies (Denmark, Israel, Latvia, Slovenia and Sweden) (Table I.B1.2b.22).

The performance of advantaged students in science did not change significantly in 43 countries/economies, and it improved in 12 countries (one OECD country, Türkiye, only). These are countries/economies with very different profiles, where advantaged students' performance in PISA 2022 was either among the highest across all PISA-participating countries/economies (Macao (China) and Türkiye), in the middle range (Georgia and Montenegro), or below the baseline (Cambodia and the Philippines); in other words, these advantaged students improved their scores starting from very different performance levels (Table I.B1.2b.22).

Given that, in many countries and economies, science performance remained stable among disadvantaged and advantaged students, it is not surprising that in most, the socio-economic gap in science performance did not change between 2022 and 2025.

Similar patterns are observed in reading and mathematics, where recent changes in the socio-economic gap also need to be interpreted in light of how performance evolved among both advantaged and disadvantaged students.

In reading, on average across OECD countries, mean performance declined significantly among socio-economically advantaged students (by 20 score points), more than among disadvantaged students (by 4 score points). As a result, the socio-economic gap shrank by 17 score points, largely because of the greater decline among advantaged students (Table I.B1.2b.23). The socio-economic gap in reading performance decreased in 37 countries and economies. In 28 of these, performance among advantaged students decreased and was likely the main driver of the reduction in the socio-economic gap. The gap increased only in the Philippines; in the remaining countries and economies, the socio-economic gap in reading did not change (Table I.B1.2b.23).

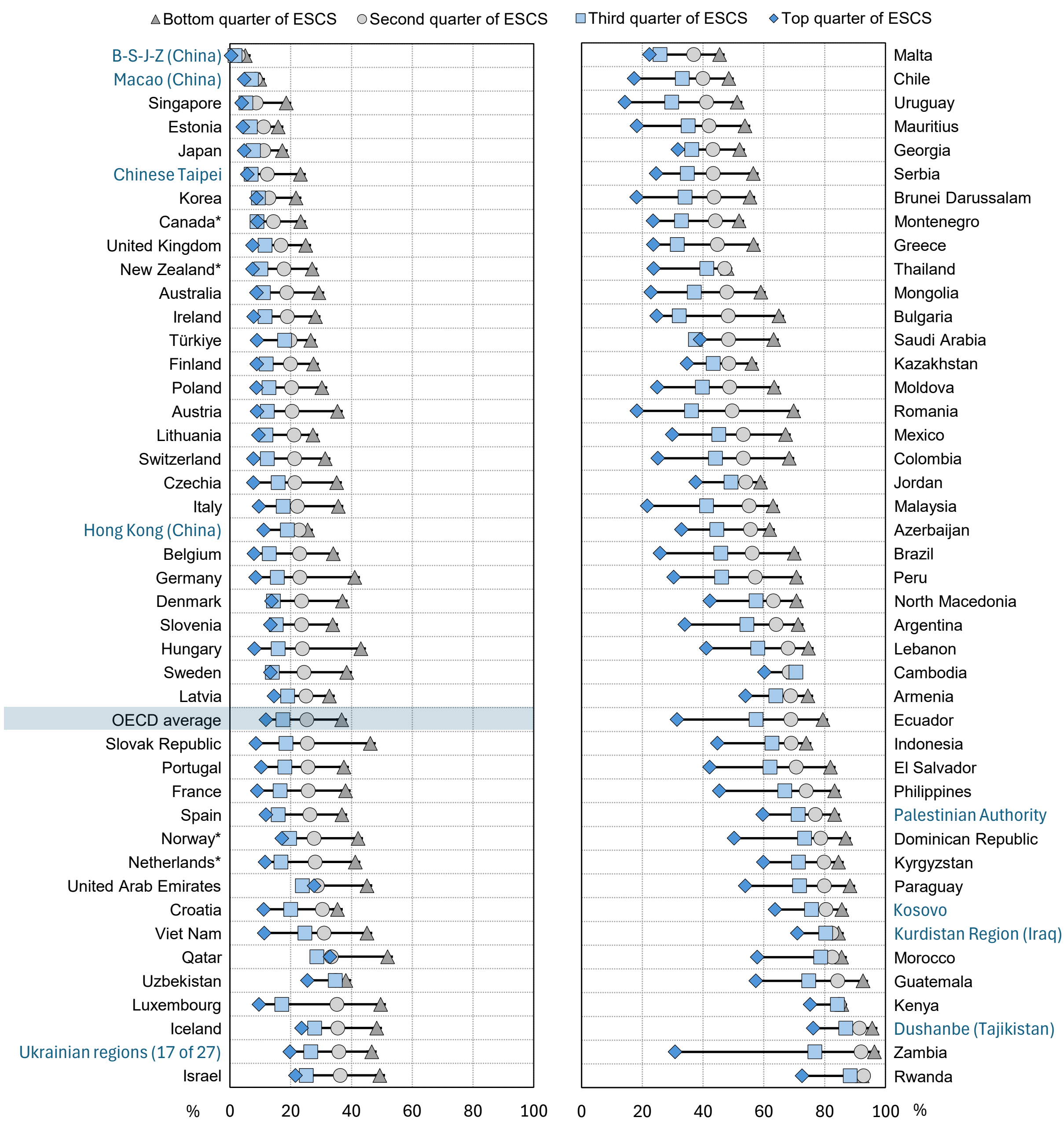
In mathematics, on average across 35 OECD countries, mean performance declined significantly among socio-economically advantaged students (by 14 score points), while the decline was not significant among disadvantaged students. As a result, the socio-economic gap shrank by 11 score points, again because of the larger decline among advantaged students (Table I.B1.2b.24). The socio-economic gap in mathematics performance decreased in 29 countries and economies. In 22 of these, performance among advantaged students decreased and was likely the main driver of the reduction in the socio-economic gap. The gap increased only in Brazil, the Philippines and Türkiye. In the remaining countries and economies, the socio-economic gap in mathematics did not change between 2022 and 2025 (Table I.B1.2b.24).

Low performance and academically resilient students

As shown in Figure I.2.15, socio-economic disadvantage is strongly associated with a higher risk of low performance in science. On average across OECD countries, 37% of socio-economically disadvantaged students, but only 12% of advantaged students, scored below proficiency Level 2 in science (a gap of 25 percentage points). The difference in the percentage of low performers in science between advantaged and disadvantaged students is 20 percentage points or more in most countries and economies; in Romania it exceeds 50 percentage points and reaches 66 percentage points in Zambia (Table I.B1.2b.14).

Figure I.2.15. Low performers in science, by socio-economic status

Percentage of students who scored below proficiency Level 2 in science, by national quarters of the PISA index of economic, social and cultural status (ESCS)



Notes: Only countries and economies with available data are shown.

Countries and economies are ranked in descending order of the percentage of low performers in science for students in the second quarter of national socio-economic status.

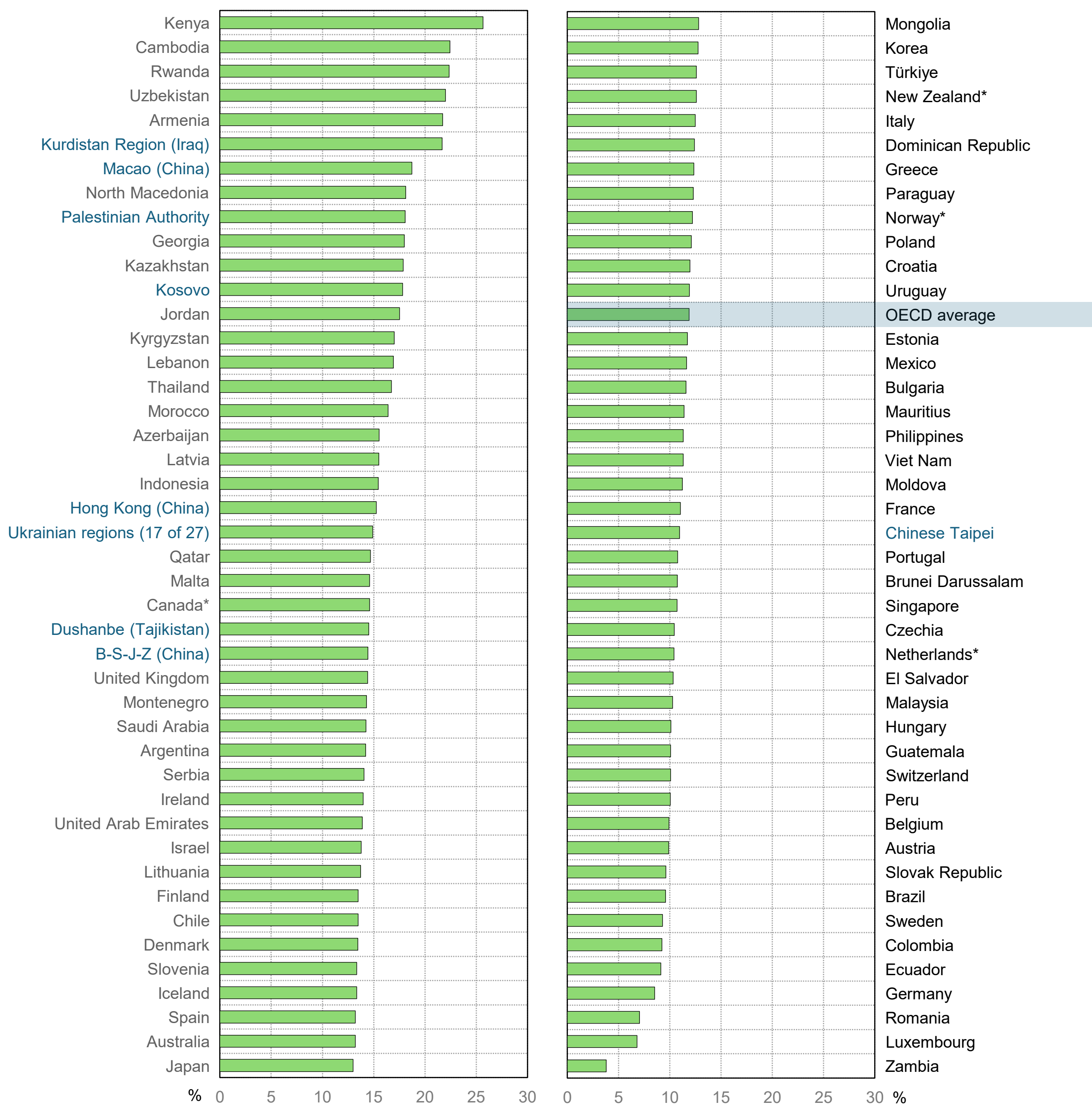
Source: OECD, PISA 2025 Database, Table I.B1.2b.14. See https://stat.link/xgs41b for the underlying data.

Nevertheless, some disadvantaged students achieve strong results. In PISA, "academically resilient students" are defined as students who are in the bottom quarter of the PISA index of economic, social and cultural status (ESCS) in their own country/economy, but who score in the top quarter of performance in that same country/economy. These students are considered academically resilient because, despite their socio-economic disadvantage, they have attained educational excellence by comparison with students in their own country.

As shown in Figure I.2.16, the percentage of academically resilient students in science varies from less than 10% in some countries/economies (Austria, Belgium, Brazil, Colombia, Ecuador, Germany, Luxembourg, Romania, the Slovak Republic, Sweden, and Zambia) to 22% or more in others (Cambodia, Kenya, Rwanda and Uzbekistan). On average across OECD countries, 12% of disadvantaged students scored in the top quarter of science performance in their own countries/economies and are considered academically resilient. In reading and mathematics, the percentage of academically resilient students is 13% and 12% respectively, on average across OECD countries (Tables I.B1.2b.3and I.B1.2b.4).

Figure I.2.16. Academically resilient students in science

Percentage of socio-economically disadvantaged students who scored in the top quarter of science performance in their own country/economy



Notes: Only countries and economies with available data are shown.
Socio-economic status is measured by the PISA index of economic, social and cultural status.
Countries and economies are ranked in descending order of the percentage of resilient students in science.
Source: OECD, PISA 2025 Database, Table I.B1.2b.2. See https://stat.link/xgs41b for the underlying data.

Complementing these analyses, a multidimensional deprivation indicator based on PISA 2025 data captures the extent of student deprivation in terms of a lack of essential items and activities due to financial constraints, across two distinct thresholds: material deprivation and social deprivation. Analyses show that this indicator identifies forms of hardship that, while closely related to socio-economic status, are not fully captured by it. They also show that both lower living standards and more limited opportunities for social participation are associated with weaker learning outcomes (see Box I.2.5).

Box I.2.5. Multidimensional deprivation among students participating in PISA

The multidimensional deprivation indicator derived from PISA 2025 data is a simple aggregated measure designed to capture whether students lack essential items and activities because of financial constraints, adding further detail to analyses based on the PISA index of economic, social and cultural status (ESCS).[14] This approach reflects the idea that material hardship often involves the compounding of several disadvantages at once (Boarini and Mira d'Ercole, 2006[41]; Whelan, Layte and Maître, 2002[42]).

To provide a more detailed picture of the most socio-economically disadvantaged students, the indicator distinguishes between two dimensions: material deprivation and social deprivation. Material deprivation identifies students who lack basic goods such as basic clothing like shoes, that cannot afford new clothes,[15] and do not have access to facilities such as bath or shower. Social deprivation captures a somewhat broader form of deprivation among students who might even have their basic needs met but lack opportunities for social participation, leisure and cognitive stimulation, such as paid leisure activities, indoor games, or outdoor leisure equipment.[16] This distinction follows a broader tradition in deprivation research, which treats poverty not only as lack of income, but also as exclusion from the goods, activities and living conditions considered necessary for ordinary participation in society (Townsend, 1979[43]; Mack and Lansley, 1985[44]).

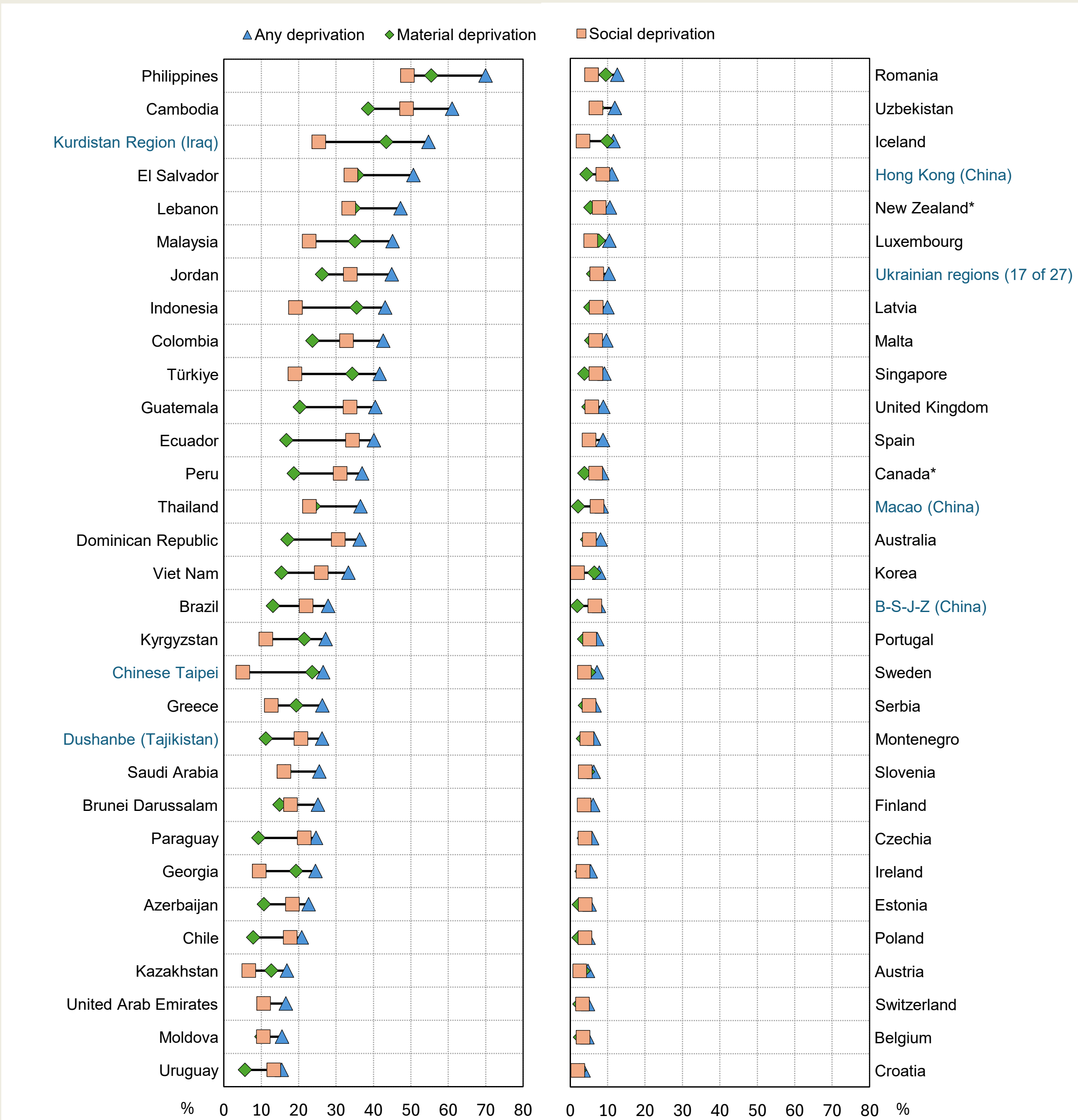
Across participating countries and economies, material and social deprivation are closely related (system-level correlation r = 0.8), indicating that they often overlap, even if they do not identify exactly the same students or the same forms of hardship. At the same time, deprivation is strongly associated with students' socio-economic status, as measured by ESCS.[17]

On average across countries and economies, about 12% of students report at least one form of deprivation. Material and social deprivation are similarly prevalent overall, each affecting about 7% of students on average, although the balance between the two varies considerably across systems (Table I.B1.2b.19). In some countries and economies, students report similar levels of material and social deprivation. This is most often the case in systems where deprivation is relatively limited overall (10% or less), but it is also observed in some systems where more than one-quarter of students report any of the two forms of deprivation, as in Brunei Darussalam, El Salvador, Lebanon, Saudi Arabia and Thailand. In a second group of systems, material deprivation is more prevalent than social deprivation. These are often systems where deprivation is relatively widespread (at least one-quarter of students report any form of deprivation): in Indonesia, the Kurdistan Region (Iraq), Malaysia, the Philippines and Türkiye more than one-third of students report material deprivation. In a third group, social deprivation is more prevalent than material deprivation, especially in systems where more than 20% of students report at least one form of deprivation. In Cambodia, Ecuador, Guatemala and Jordan, at least one-third of students report social deprivation.

Both material and social deprivations are associated with students' socio-economic status within countries and economies. On average, about 14% of students in the bottom quarter of ESCS report social deprivation, compared to 12% who report material deprivation (Table I.B1.2b.20). Cross-country variation is substantial. Looking only at social deprivation, more than half of socio-economically disadvantaged students report this form of deprivation in Cambodia, Colombia, Ecuador, Guatemala, El Salvador, Jordan, Peru, and the Philippines, whereas fewer than 5% do so in Austria, Croatia and Korea. In 24 out of 63 countries and economies with available data, more than one-quarter of socio-economically disadvantaged students experience social deprivation.

Figure I.2.17. Students' deprivation

Percentage of students with material, social or any of the two types of deprivation



Notes: Only countries and economies with available data are shown.
Countries and economies are ranked in descending order of the percentage of students with any kind of deprivation.
Source: OECD, PISA 2025 Database, Table I.B1.2b.19. See https://stat.link/xgs41b for the underlying data.

Deprivation cannot be reduced to a narrow measure of basic material lack. Acute material hardship remains highly relevant. However, social deprivation captures another important dimension of disadvantage: exclusion from everyday opportunities for participation, leisure and stimulation. In some contexts, students may not be deprived of the most basic goods, but may still be excluded from activities and resources that support social participation and cognitive development. The indicator therefore helps to identify forms of hardship that may remain only partially visible in broader composite measures of socio-economic status, particularly when disadvantage is expressed through restricted opportunities for social and cognitive participation rather than through the absence of basic goods (Table I.B1.2b.20).

Deprivation is also consistently associated with lower performance in science. On average across participating countries and economies, students reporting any form of deprivation score 52 points lower in science than those who do not report deprivation, and this negative relationship is observed in most participating systems with available data (Table I.B1.2b.21). When the two dimensions are considered separately, material deprivation shows the stronger relationship with science performance, with an average gap of 64 score points, compared with 53 score points for social deprivation. The larger gap associated with material deprivation is consistent with the more severe nature of the items included in that dimension. At the same time, the sizeable gap associated with social deprivation shows that more socially mediated forms of exclusion are also closely linked to weaker learning outcomes.

These results suggest that deprivation provides an important additional lens for understanding disadvantage in PISA 2025. Although the average share of students reporting deprivation is relatively low, the performance gaps associated with deprivation are large. This indicates that the indicator is not merely capturing marginal differences in household resources, but forms of hardship that are strongly related to students' educational opportunities and outcomes. This makes the multidimensional deprivation indicator a useful complement to ESCS: it identifies concrete forms of deprivation that are closely related to socio-economic position, but not fully reducible to it, and helps describe the conditions faced by students at the most disadvantaged end of the distribution (Tables I.B1.2b.20and I.B1.2b.21).

Changes in socio-economic disparities at different levels of proficiency

Differences in performance by socio-economic status can also be examined by looking at changes in the proportions of advantaged and disadvantaged students who score below baseline proficiency Level 2 ("low performers") and at proficiency Levels 5 or 6 ("top performers") across PISA domains.

As shown in Table I.2.11, the percentage of disadvantaged students who scored below proficiency Level 2 in science did not change significantly on average across 35 OECD countries, although it decreased in 21 countries and economies (out of 73 with available data) between 2022 and 2025. In 9 of these countries and economies, the share of disadvantaged students scoring below Level 2 in science declined by more than 10 percentage points, and in seven it declined by more than 15 percentage points. This trend keeps the share of disadvantaged low performers at levels observed in previous cycles (2015 and 2018).

By contrast, in only three countries and economies, the share of disadvantaged students scoring below Level 2 in science increased. In all of these, over one in four disadvantaged students scored below proficiency Level 2 in science in PISA 2025, ranging from 26% in Hong Kong (China) to 33% in Latvia and 93% in Guatemala (Table I.B1.2b.28).

In 49 countries and economies, the percentage of disadvantaged students scoring below proficiency Level 2 in science did not change significantly between 2022 and 2025.

Among socio-economically advantaged students, the share of low performers in science increased on average across OECD countries (by about two percentage points) between 2022 and 2025. It rose in 12 countries and economies (mostly OECD countries), ranging from around 2 points in Singapore to more than 8 percentage points in Israel and Malta. Conversely, the share of low performers among advantaged students declined in 14 countries and economies, reaching decreases of up to 22 percentage points in Cambodia and 49 percentage points in Uzbekistan. In the large majority of countries and economies, this share did not change significantly.

Table I.2.11. Change between 2022 and 2025 in low and top performers in science, by national quarter of socio-economic status

	Change in percentage of low performers		Change in percentage of top performers			Change in percentage of low performers		Change in percentage of top performers	
	Disadvantaged students	Advantaged students	Disadvantaged students	Advantaged students		Disadvantaged students	Advantaged students	Disadvantaged students	Advantaged students
Uzbekistan	-47.5	-49.2	0.4	0.5	Mexico	-1.8	-0.2	0.1	0.2
Georgia	-27.6	-13.4	0.2	1.3	Sweden	-1.4	3.8	-0.5	-5.2
Cambodia	-24.2	-21.7	0.0	0.0	Chile	-1.2	-1.9	0.0	-0.3
Jordan	-21.2	-15.2	0.0	0.6	Canada*	-1.2	1.0	-1.1	-4.5
Montenegro	-18.9	-13.1	0.2	2.4	Dominican Republic	-1.1	-7.9	0.0	0.0
United Arab Emirates	-17.4	-8.5	1.2	0.5	Estonia	-1.1	0.4	-0.7	-2.8
Thailand	-16.7	-8.4	0.1	0.4	Colombia	-1.0	-1.8	0.0	0.4
Slovak Republic	-13.4	-2.0	0.7	1.3	Netherlands*	-0.9	1.8	-0.9	-3.1
Mongolia	-11.4	-2.2	0.0	0.4	Poland	-0.7	1.6	0.5	-2.3
Qatar	-9.8	3.7	0.1	-2.0	Malta	-0.7	8.1	0.4	-0.8
North Macedonia	-9.7	-1.8	0.0	0.4	Indonesia	-0.7	-9.0	0.0	0.0
Saudi Arabia	-9.6	-9.0	0.1	0.5	Kosovo	-0.6	-1.5	0.0	0.0
Bulgaria	-8.7	0.8	0.4	1.3	Macao (China)	-0.5	0.0	-0.2	6.4
Austria	-8.6	3.4	1.0	0.0	Romania	-0.4	1.8	0.1	1.5
Belgium	-8.0	2.6	-0.2	-0.5	Finland	-0.4	0.8	-0.8	-4.2
Lithuania	-7.4	0.1	0.4	-3.5	Norway*	-0.2	2.9	-1.5	-4.4
Philippines	-7.1	-14.7	0.0	0.3	Argentina	0.1	0.2	-0.1	0.6
New Zealand*	-7.1	0.1	2.2	1.2	Singapore	0.2	2.0	2.3	-2.8
Türkiye	-7.0	-3.8	1.0	8.1	Brunei Darussalam	0.8	2.9	-0.3	-1.8
Uruguay	-6.8	-4.9	0.0	-0.2	Chinese Taipei	1.1	1.1	1.7	-1.0
Ukrainian regions (17 of 27)	-6.5	0.0	0.2	-0.5	Ireland	1.8	0.8	0.2	-2.8
Iceland	-5.7	2.4	0.4	0.6	Spain	2.0	2.5	-0.9	-2.4
United Kingdom	-4.8	-0.9	0.6	1.4	Kazakhstan	2.2	1.5	0.0	-0.9
Italy	-4.7	-0.8	0.4	-0.5	Portugal	2.7	3.0	0.3	1.1
France	-4.4	1.8	0.7	-3.1	Palestinian Authority	2.9	7.6	0.0	0.0
Czechia	-4.4	0.9	0.0	-4.9	Morocco	3.0	-1.0	0.0	0.3
Switzerland	-4.2	2.9	0.6	-1.5	Croatia	3.2	0.0	-0.3	-0.6
Israel	-4.2	8.5	0.4	-4.8	Greece	3.3	4.3	0.1	-0.5
El Salvador	-3.9	-6.3	0.0	0.1	Japan	3.4	0.2	-1.1	-2.9
Peru	-3.7	1.3	0.0	-1.0	Paraguay	3.6	6.6	0.0	0.0
Hungary	-3.1	2.7	-0.3	-2.9	Slovenia	3.7	6.3	1.1	-5.2
Australia	-2.9	0.4	0.8	-5.7	Germany	3.8	1.7	-1.0	0.1
Moldova	-2.8	-1.9	0.1	1.0	Denmark	4.3	4.1	0.0	-4.7
Korea	-2.5	3.0	-1.5	-5.7	Guatemala	4.5	5.0	0.0	0.0
Malaysia	-2.4	-3.4	0.0	-0.2	Serbia	5.8	4.4	0.0	-2.1
Brazil	-2.3	-6.5	0.0	-1.1	Latvia	6.2	7.8	0.2	-4.3
OECD average-35	-2.2	1.7	0.1	-1.8	Hong Kong (China)	6.8	3.7	-3.4	0.5

Negative change in percentage of low performers.
Positive change in percentage of top performers.
Non-significant change.
Positive change in percentage of low performers.
Negative change in percentage of top performers.
Source: OECD, PISA 2025 Database, Tables I.B1.2b.28 and I.B1.2b.31.

In reading, the percentage of disadvantaged students scoring below proficiency Level 2 has increased steadily across cycles. About 42% of disadvantaged students scored below Level 2 in 2025, around two percentage points more than in 2022. In most countries and economies where this share increased, similar increases had already been observed in previous cycles. Among advantaged students, the share scoring below proficiency Level 2 has also risen: the 16% observed in 2025 represents five percentage points more than in 2022. Here too, most countries with increases in recent cycles had already reported increases in earlier cycles (Table I.B1.2b.29).

In mathematics, the share of disadvantaged students scoring below proficiency Level 2 increased in previous cycles and remained high in 2025. About 48% of disadvantaged students scored below Level 2 in 2025, a share not significantly different than that in 2022. Among advantaged students, the share scoring below proficiency Level 2 increased, reaching 18% in 2025, about four percentage points more than in 2022. As in reading, countries and economies with recent increases typically experienced similar patterns in earlier cycles (Table I.B1.2b.30).

As shown in Table I.2.11, between 2022 and 2025, among socio-economically advantaged students, the share of top performers in science decreased on average across OECD countries (by two percentage points) and in 11 countries and economies (all OECD countries), while it increased in three (Macao (China), Montenegro and Türkiye). Among disadvantaged students, the share of top performers in science remained unchanged on average across 35 OECD countries and in 68 countries and economies. It increased in only two countries (the Slovak Republic and the United Arab Emirates) and decreased in three (Indonesia, Hong Kong (China) and Norway*). In Norway*, the share of top performers declined by about 1 percentage point among disadvantaged students and by about 4 percentage points among advantaged students.

In reading, between 2022 and 2025, the share of top-performing advantaged students declined on average across 35 OECD countries (by four percentage points) and in 32 countries and economies, while it increased in only one (Türkiye). It stayed unchanged in the remaining countries and economies (Table I.B1.2b.32).

Among disadvantaged students, the share of top performers in reading remained unchanged on average across OECD countries and in most countries and economies. It increased in only one country (New Zealand*) and declined in four (Canada*, Hong Kong (China), Norway* and Spain) (Table I.B1.2b.32).

In mathematics, between 2022 and 2025, the share of top-performing advantaged students declined on average across 35 OECD countries (by three percentage points) and in 18 countries and economies, while it increased in only one (Türkiye). It stayed unchanged in the remaining countries and economies (Table I.B1.2b.33). In several systems (Canada*, Denmark, Finland, Hungary, and Spain), the decline observed in 2025 is part of a longer-term downward trend since 2015.

Among disadvantaged students, the share of top performers in mathematics remained unchanged on average across OECD countries and in most participating countries and economies. It increased in three countries (the Slovak Republic, New Zealand* and the United Arab Emirates,) and declined in four (Hong Kong (China), Hungary, Singapore and Spain) (Table I.B1.2b.33).

Overall, these results show that recent changes in socio-economic disparities across proficiency levels have been driven more by declining performance among advantaged students, particularly at the top of the distribution, than by sustained improvements among disadvantaged students.

Fairness in terms of student gender

While socio-economic status is one of the strongest predictors of student performance, it is not the only dimension along which educational opportunities and outcomes remain unevenly distributed. Gender is another important axis of inequality in education systems.

Over the past century, many countries have made significant progress in narrowing, and even closing, long-standing gender gaps in educational attainment (Van Bavel, Schwartz and Esteve, 2018[45]). Yet, PISA continues to reveal persistent, subject-specific gender divides, especially in reading and mathematics. Social and cultural contexts that reinforce stereotypical attitudes and behaviours may, in turn, be associated with differences in performance (OECD, 2015[46]; OECD, 2023[3]). These disparities are reflected not only in average results, but also in the composition of top- and low-performing groups. For example, girls remain under-represented among top performers in science and mathematics, which may partly help explain persistent gender gaps in science, technology, engineering and mathematics (STEM) careers (OECD, 2015[46]). By contrast, boys are strongly over-represented among low achievers in reading (OECD, 2023[3]).

Gender disparities in performance at age 15 may have long-term consequences for girls' and boys' personal and professional futures (OECD, 2015[46]). Boys who lag behind and lack basic proficiency in reading may face difficulties in gaining access to further education, desirable positions in the labour market, and comprehensive personal development.

To understand these divides more fully, it is necessary to look beyond mean performance and examine the extremes of the performance distribution. As in the earlier analyses of socio-economic disparities, gender differences are often more pronounced among the highest- or lowest-achieving students than they are at the mean (Baye and Monseur, 2016[47]).

Gender and mean performance

In PISA 2025, girls performed slightly above boys in science by one score point on average across OECD countries (mean score difference in Figure 2.18). While boys outperformed girls in science in 17 countries and economies, girls outperformed boys in another 35 countries or economies. The widest gaps in science performance in favour of girls (about 20 score points or more) were observed in North Macedonia, Jordan, Slovenia, Finland, Mongolia, Bulgaria, the Kurdistan Region (Iraq) and the Palestinian Authority, (in ascending order); the widest gaps in favour of boys (over 20 score points) were observed in Kenya and Rwanda. In 37 countries and economies, the mean difference in science performance between boys and girls is not statistically significant.

Figure I.2.18 shows not only differences in the average performance of boys and girls, but also differences at the extreme ends of the performance distribution. It is important to consider performance differences at these extremes because variation in student performance (as measured by the standard deviation) is greater among boys than girls in all subjects measured by PISA on average across OECD countries and in most countries/economies (Tables I.B1.2c.1, I.B1.2c.2 and I.B1.2c.3).

The science results illustrate particularly clearly why looking only at mean performance can be misleading: gender differences are small on average, but more pronounced at the lower and upper ends of the distribution.

In science, the highest-performing boys outperform the highest-performing girls on average across OECD countries (10 score points difference) and in the largest group of countries/economies. In seven countries/economies, the highest-performing girls outperformed the highest-performing boys. In the Kurdistan Region (Iraq) and the Palestinian Authority, they did so by more than 23 score points.

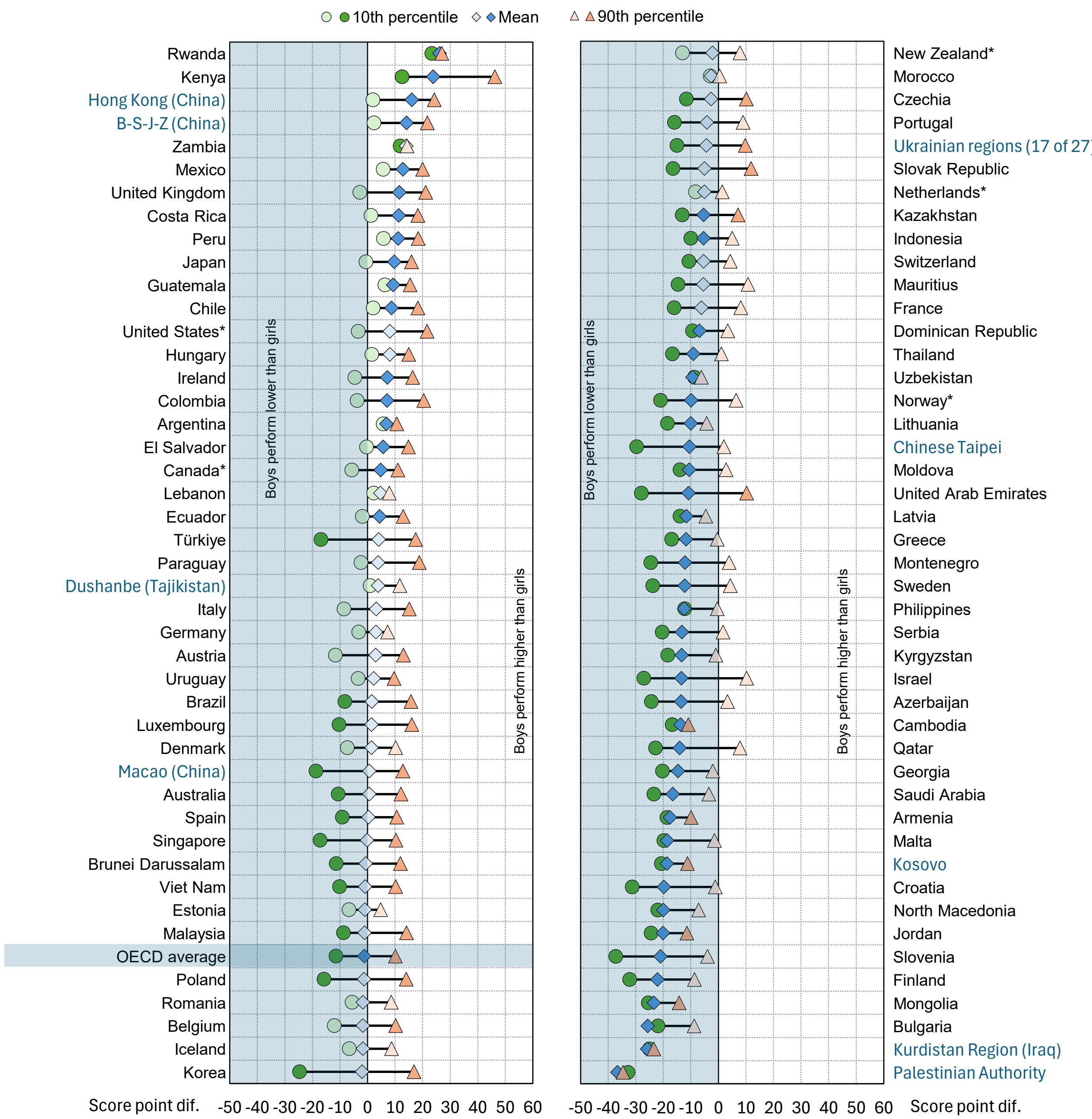
Among the 10% weakest-performing students, the pattern is reversed and girls outperformed boys on average across OECD countries (12 score point difference) and in 54 out of the 89 countries/economies with available data (Figure I.2.18). In Croatia, Finland, the Palestinian Authority and Slovenia, the weakest-performing girls outperformed the weakest-performing boys by more than 30 score points. These results suggest that the average gender differences are most likely being outweighed by the differences in the mid and bottom of the performance distribution.

In reading, girls outperformed boys on average mean score (by 30 score points), and at both extremes of the performance distribution (Table I.B1.2c.2). Girls outperformed boys in reading in all countries and economies, with three exceptions (in Kenya and Zambia, the difference in reading performance between boys and girls is not statistically significant, and in Rwanda, boys outperform girls by 6 score points). The widest gaps in reading performance in favour of girls (45 score points or more) were observed in Finland, Greece, Malta, Croatia, Bulgaria, Slovenia and the Palestinian Authority (in ascending order). Moreover, the weakest-performing girls outperformed the weakest-performing boys on average across OECD countries (40 score points difference) and in all countries/economies with the sole exceptions of Rwanda and Zambia (no statistically significant differences).

Similarly, the highest-performing girls outperformed the highest-performing boys on average across OECD countries (by 19 score points) and in most countries/economies.

Figure I.2.18. Gender gap in science performance

Score-point difference in mean science performance between boys and girls and between low- and high-performing boys and girls (10th and 90th percentiles)



Notes: Statistically significant differences are shown in a darker tone (see Annex A3).

Countries and economies are ranked in descending order of the score-point difference for the mean in science related to gender (boys minus girls).

Source: OECD, PISA 2025 Database, Table I.B1.2c.1. See https://stat.link/xgs41b for the underlying data.

In mathematics, boys outperformed girls on average mean scores (by 13 score points), as well as at both extremes of the performance distribution (Table I.B1.2c.3). Among the weakest-performing students, boys outperformed girls on average across OECD countries (by 3 score points) although in a majority of countries and economies there were no significant differences. The gender gap is much larger among the highest-performing students. At the upper end of the distribution, boys outperformed the highest-performing girls on average across OECD countries (by 24 score points) and in most countries/economies. Only in the Palestinian Authority the gender gap is reversed.

Changes in gender disparities

Table I.2.12 shows changes between 2022 and 2025 in the difference between boys and girls (hereafter, this difference will be referred to as the “gender gap”) in average science performance.

Table I.2.12. Change between 2022 and 2025 in mean performance in science, by gender

	Girls	Boys	Gender gap (Boys - Girls)		Girls	Boys	Gender gap (Boys - Girls)		Girls	Boys	Gender gap (Boys - Girls)
Chinese Taipei	10	-4	**-14**	Brazil	7	4	-4	Korea	-2	-1	1
Latvia	-19	-32	**-13**	Italy	7	4	-3	Thailand	22	24	1
Israel	-16	-29	-13	Costa Rica	15	11	-3	Slovak Republic	12	13	1
Kosovo	6	-7	**-13**	Peru	-1	-4	-3	Ireland	-5	-4	2
Serbia	-14	-23	-10	Moldova	7	3	-3	Philippines	16	18	2
Bulgaria	4	-5	-9	Portugal	-1	-4	-2	Estonia	0	3	3
Croatia	-2	-11	-9	Belgium	0	-2	-2	Germany	-8	-6	3
Mongolia	16	7	**-9**	Australia	3	1	-2	El Salvador	10	13	3
Austria	10	2	-8	Palestinian Authority	-15	-17	-2	United Kingdom	10	13	3
Netherlands*	1	-7	-8	Greece	-6	-7	-2	Norway*	-10	-6	4
Singapore	2	-5	-7	New Zealand*	6	5	-1	Guatemala	-24	-20	4
Malta	-10	-17	-7	Macao (China)	-2	-3	-1	Canada*	-7	-3	4
Uruguay	12	6	-6	Saudi Arabia	24	23	-1	Hungary	-8	-4	5
Slovenia	-13	-19	-6	OECD average-35	-2	-3	-1	United Arab Emirates	23	29	6
Switzerland	1	-4	-6	Czechia	-7	-8	-1	Dominican Republic	-3	4	6
Denmark	-13	-19	-6	Mexico	4	3	-1	Morocco	-11	-4	7
Chile	2	-4	-5	Finland	-6	-7	-1	Qatar	-2	6	7
Uzbekistan	85	80	-5	Georgia	38	38	0	Japan	-13	-5	8
North Macedonia	1	-4	-5	Romania	-3	-3	0	Türkiye	14	23	9
Cambodia	37	32	-5	Indonesia	6	6	0	Brunei Darussalam	-12	-1	11
Spain	-5	-10	-5	Kazakhstan	-4	-4	0	Iceland	-11	0	11
France	-1	-6	-5	Poland	-4	-4	0	Malaysia	-3	9	12
Montenegro	34	30	-4	Paraguay	-13	-13	1	Jordan	27	39	13
Lithuania	6	1	-4	Colombia	2	3	1	Hong Kong (China)	-33	-17	16
Ukrainian regions (17 of 27)	1	-3	-4	Argentina	-13	-12	1				
Sweden	-6	-10	-4	United States*	2	3	1				

Notes: Only countries and economies that can compare PISA 2022 and PISA 2025 results are shown.
Positive change in mean performance.
Non-significant change.
Negative change in mean performance.
Source: OECD, PISA 2025 Database, Tables I.B1.2c.23, I.B1.2c.24 and I.B1.2c.25. See https://stat.link/xgs41b for the underlying data.

As shown in the table, the gender gap in science performance did not change between 2022 and 2025 on average across OECD countries, and in most countries/economies (64 out of the 75 with comparable data). The gender gap widened in favour of girls in four countries/economies and shrank in six. It widened in favour of boys in Hong Kong (China) only (Table I.B1.2c.25).

The gender gap in performance widened the most (16 score points) in Hong Kong (China) where boys' and girls' performance declined, but the drop was the largest among girls (33 score points). Moreover, Kosovo, Latvia and Chinese Taipei saw important gender-gap widening. Latvia is among countries where girls' performance declined the most (by 19 score points), but boys' performance dropped even more than for girls (by 32 score points).

Similarly, the gender gap widened in Mongolia, mainly driven by an increase in mean performance among girls (by 16 score points) while boys' performance remained more stable.

On the opposite end, in Brunei Darussalam, the gap shrank and became non-significant due to a strong drop in performance among girls, while boys' scores remained unchanged between 2022 and 2025. Something similar happened in Iceland, which saw an important decrease in the gap, pulled by a drop in girls' scores in science. In Jordan and the United Arab Emirates, the narrowing gap was driven by an important increase in boys' performance even if girls' also increased albeit to a lesser extent.

Girls' performance in science did not change between 2022 and 2025, on average across OECD countries. It declined in 15 countries/economies; it did not change significantly in another 45 countries/economies and improved in 15 countries/economies. Girls' performance in science declined by more than 33 score points in Hong Kong (China) and about 24 points in Guatemala. On the opposite end, it increased by more than 85 score points in Uzbekistan and between 34 and 38 score points in Cambodia, Georgia and Montenegro.

Performance trends in science among boys were also predominantly stable. Boys' performance did not change significantly, on average and in 48 countries/economies; it declined in 13 countries/economies and improved in 14. Boys' performance in science declined by about 32 score points in Latvia, about 29 points in Israel, and over 20 points in Guatemala and Serbia.

In reading, the gender gap in performance widened in favour of girls between 2022 and 2025, on average across OECD countries (by five score points), and in 19 countries/economies. The gender gap narrowed in 7 countries/economies, and it remained unchanged in most countries/economies (Table I.B1.2c.28). In all countries and economies with no significant changes between 2022 and 2025, girls outperformed boys in reading; in 23 of these countries, girls' performance declined in the same period. Of the 19 countries and economies where the gender gap widened, boys' performance declined in 18 of them and girls' performance declined in 8 (in all cases, the drop was smaller). Among countries and economies where the gender gap narrowed (i.e. in favour of boys), in Malaysia, girls' performance did not change significantly while boys' increased. In two others, girls' performance decreased while boys' performance remained stable (Brunei Darussalam), or also decreased but to a lesser extent (Hong Kong (China)). In other three countries (Jordan, the Philippines and the United Arab Emirates), both girls' and boys' performance increased but to a larger extent for boys (Tables I.B1.2c.26, I.B1.2c.27and I.B1.2c.28).

Girls' performance in reading declined by 12 score points between 2022 and 2025, on average across the 35 OECD countries with comparable data for the two cycles. It also declined in 34 countries/economies; it did not change significantly in another 33 countries/economies and improved in 8 countries/economies. Girls' performance in reading declined by about 30 points or more in Guatemala, Israel and Latvia. Girls' performance in reading increased between 16 and 17 score points in Cambodia, Montenegro and the Philippines (Table I.B1.2c.26).

Trends among boys were also predominantly negative and performance in reading declined by 17 points, on average. Boys' performance in reading declined in 48 countries/economies; it did not change significantly in 19 countries/economies and improved in 8. Boys' performance in reading declined by about 52 points in Latvia, and about 46 points in Israel (Table I.B1.2c.27).

In mathematics, the gender gap in performance widened in favour of boys between 2022 and 2025, on average across 35 OECD countries (by four score points), and in 5 countries/economies – it also inverted in favour of boys in another 3 systems. The gender gap narrowed in Brunei Darussalam, Finland, the Philippines, Qatar and Serbia, and it remained unchanged in most countries/economies (in 61 out of the 75 with comparable data) (Table I.B1.2c.31). Yet, in most countries and economies with no significant changes between 2022 and 2025, boys outperformed girls in mathematics; in 32, boys' performance in mathematics remained the same between the two cycles, in 23 it decreased in the same period. In Serbia, where the gender gap narrowed and virtually disappeared, performance in mathematics declined for both boys and girls, but the drop was larger for boys. In other three systems where the gender gap also became non-significant (Brunei Darussalam, Finland and Qatar), girls results were behind those of boys. Among countries and economies where the gender gap widened in favour of boys, in Canada* and Kazakhstan, the performance of boys and girls declined with larger drops for girls. In Argentina, only girls' performance declined (Tables I.B1.2c.29, I.B1.2c.30and I.B1.2c.31).

Girls' performance in mathematics declined by 11 score points on average between 2022 and 2025. It also declined in 36 countries/economies; it did not change significantly in another 32 countries/economies and it improved in 7 countries/economies. Girls' performance in mathematics declined by more than 23 score points in Hong Kong (China) and Slovenia, between 21 and 23 points in Latvia and Malta, and over 20 points in Denmark and Israel. Girls' performance in mathematics increased between 21 and 27 score points in Cambodia, Georgia and Jordan (Table I.B1.2c.29).

Performance trends among boys were also predominantly negative. Boys' performance in mathematics declined by 7 points on average. It declined in 27 countries/economies, it did not change significantly in 39 countries/economies, and it improved in 9. Boys' performance in mathematics declined by about 31 score points in Malta, between 28 and 29 points in Israel and Serbia, and about 25 points in Slovenia (Table I.B1.2c.30).

Gender and low performance

Differences at the lower end of the performance distribution are reflected in the share of students who did not attain baseline proficiency.

As shown in Figure I.2.19, on average across OECD countries in 2025, 27% of boys and 24% of girls are low performers in science. In 51 countries and economies, more boys than girls are low performers in science, whereas more girls than boys scored below proficiency Level 2 in science in 7 countries and economies.

Gender gaps in the share of low performers in science are generally small. The widest gender gaps in low science performance were observed in:

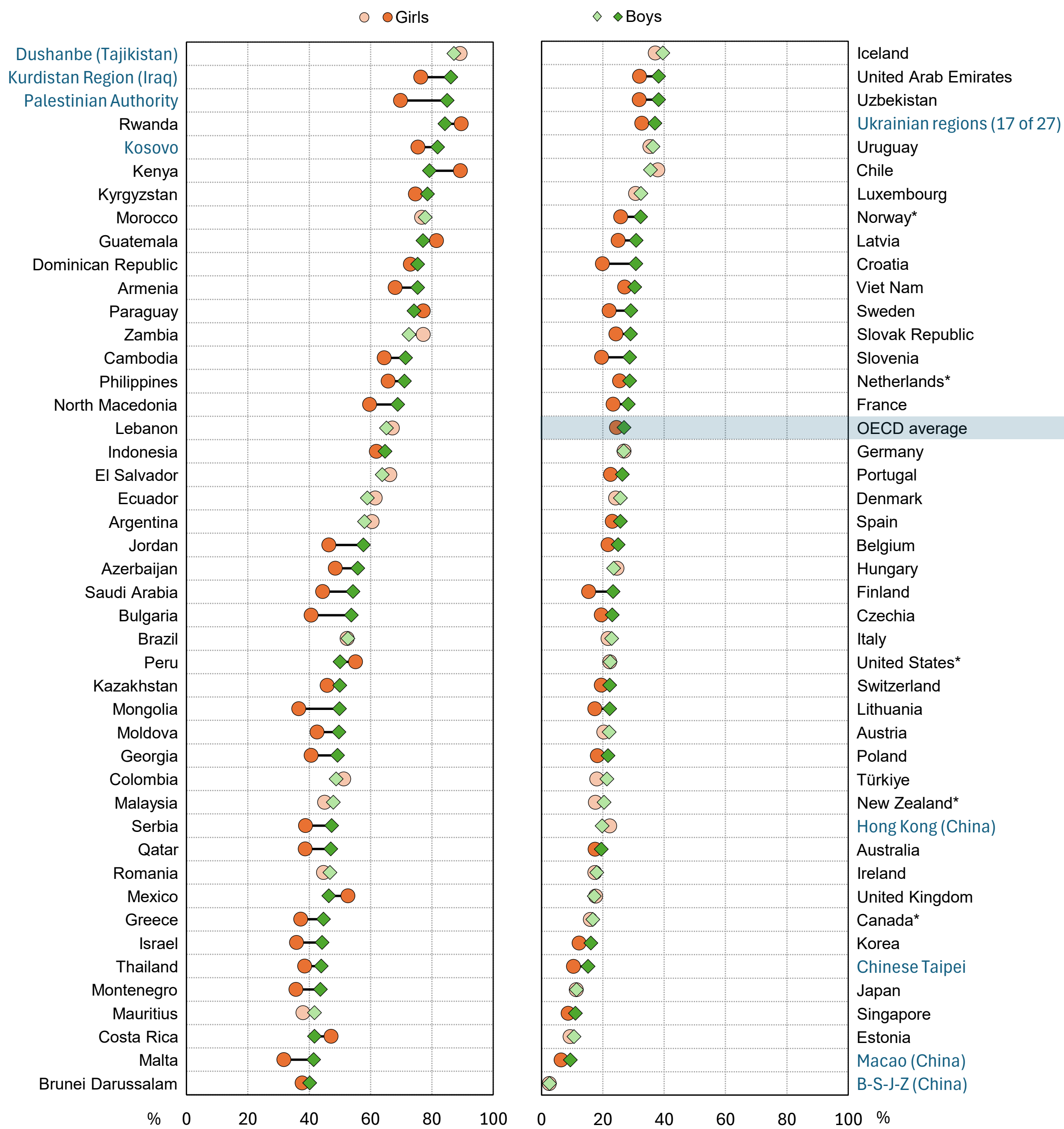
- Mexico and Kenya (in ascending order), where the share of girls who did not attain proficiency Level 2 is greater than the corresponding share of boys by between 6 and 10 percentage points.
- Croatia, Jordan, Bulgaria, Mongolia and the Palestinian Authority (in ascending order) where the share of boys who did not attain proficiency Level 2 is larger than the corresponding share of girls by between 10 and 16 percentage points.

In reading, differences are more pronounced: boys performed significantly worse than girls. On average across OECD countries in PISA 2025, 37% of boys and 25% of girls did not attain the baseline level of proficiency in reading. In 84 out of 89 countries and economies with comparable data, a larger share of boys than girls are low performers in reading; in Montenegro, Greece, the Palestinian Authority and Croatia (in ascending order) this difference is larger than 20 percentage points (Table I.B1.2c.15).

In mathematics, the differences between boys and girls are not significant in most countries and economies. On average across OECD countries, 33% of boys and 36% of girls did not attain the baseline level of proficiency in mathematics. In 32 out of 89 countries and economies with comparable data, a larger share of girls than boys are low performers, with gaps under 10 percentage points with the sole exception of Costa Rica, where this difference is about 13 percentage points (Table I.B1.2c.16).

Figure I.2.19. Low performers in science, by gender

Percentage of students who score below proficiency Level 2 in science, by gender



Notes: Statistically significant differences are shown in a darker tone (see Annex A3).

Countries and economies are ranked in descending order of the percentage of low-performing boys in science.

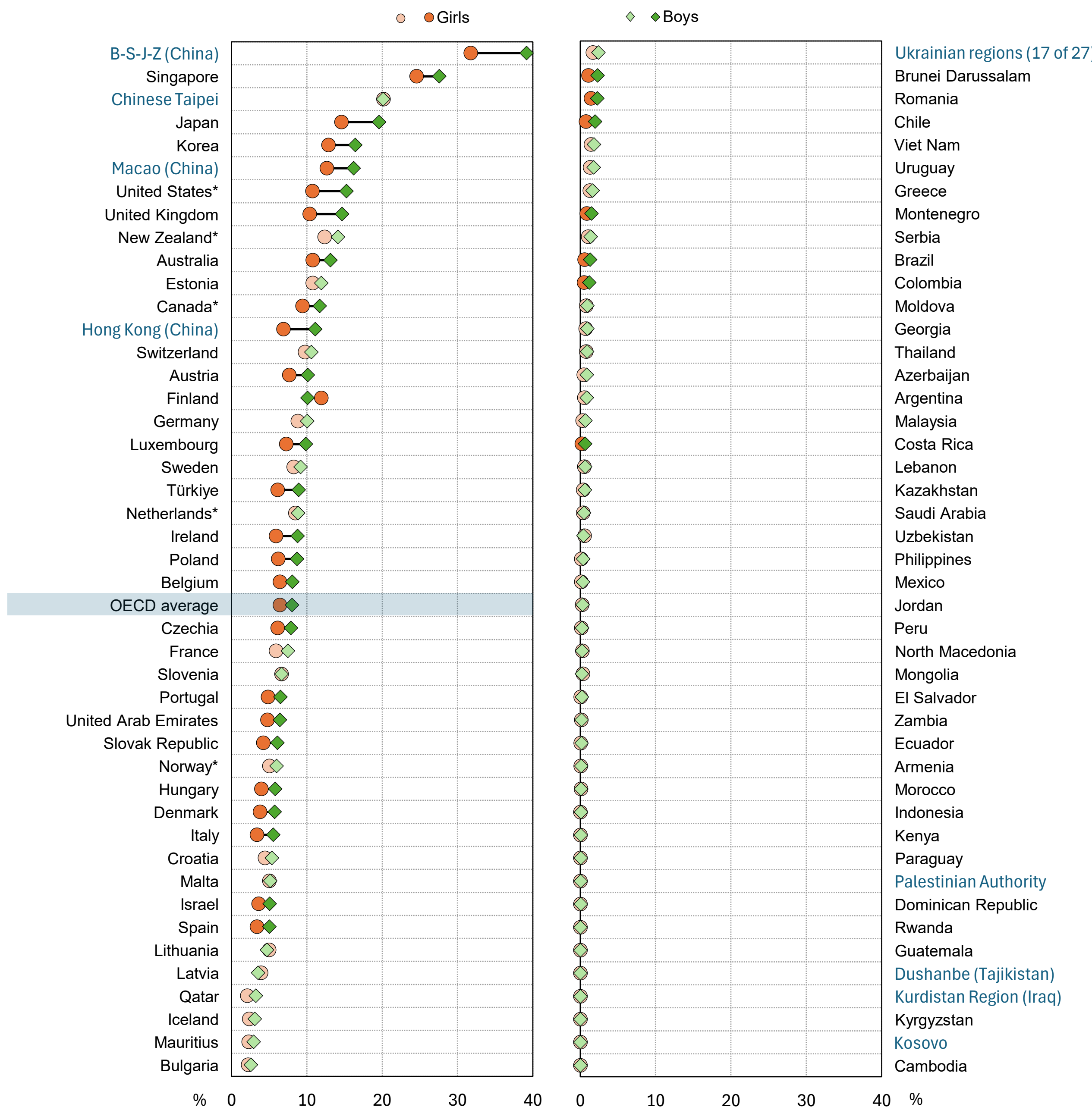
Source: OECD, PISA 2025 Database, Table I.B1.2c.14. See https://stat.link/xgs41b for the underlying data.

Gender and top performance

On average across OECD countries, about 8% of boys and 6% of girls scored at proficiency Level 5 or 6 in science (Figure I.2.20). In most countries and economies participating in PISA 2025, there are no statistically significant differences in the share of top-performing boys and girls in science. Among the 33 countries and economies where such differences are observed, most are small (i.e. lower than five percentage points). However, in B-S-J-Z (China), the share of top performers is about seven percentage points higher among boys than among girls. Only in Finland is the share of top performers larger among girls than among boys, by about two percentage points.

Figure I.2.20. Top performers in science, by gender

Percentage of students who score at proficiency Level 5 or above in science, by gender



Notes: Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the percentage of top-performing boys in science.
Source: OECD, PISA 2025 Database, Table I.B1.2c.14. See https://stat.link/xgs41b for the underlying data.

On average across OECD countries, 5% of boys and 7% of girls scored at proficiency Level 5 or above in reading (Table I.B1.2c.15). In 32 countries and economies, a larger share of girls than boys are top performers in reading; only in New Zealand*, Singapore and Chinese Taipei is this difference larger than five percentage points. In most countries and economies, the difference between boys and girls in the share of top performers in reading is not statistically significant. In no country/economy is the share of top performers in reading larger among boys than among girls.

In mathematics, about 10% of boys and 6% of girls scored at proficiency Level 5 or above, on average across OECD countries (Table I.B1.2c.16). In most countries and economies, a larger share of boys than girls are top performers in mathematics. Only in B-S-J-Z (China), Hong Kong (China) and Macao (China) do the differences exceed 7 percentage points but remain below 10 percentage points. In no country/economy is the share of top performers in mathematics larger among girls than among boys.

These results show that gender disparities in performance vary markedly across subjects and across different parts of the performance distribution.

Changes in gender disparities at different levels of proficiency

As shown in Table I.2.13, the percentage of girls who scored below proficiency Level 2 in science did not change on average across OECD countries, nor in most countries/economies (45 out of 75 with available data), between 2022 and 2025. In 15 countries and economies, the share decreased. In Jordan, Montenegro, Saudi Arabia and Thailand, the share of girls scoring below Level 2 in science decreased by more than 10 percentage points, and in Cambodia, Georgia and Uzbekistan, this share decreased by more than 20 percentage points. In another 15 countries/economies, the percentage of girls who scored below proficiency Level 2 in science increased, especially in Hong Kong (China) (by over 10 percentage points).

Similarly, there was no significant average change among boys. Between 2022 and 2025, the share of low-performing boys in science did not change on average across OECD countries and in most countries/economies, it decreased in 13 countries/economies and increased in another 14. In Uzbekistan, the share of low-performing boys in science decreased by over 42 percentage points. At the opposite end, the share increased by over 10 percentage points in Latvia and Serbia.

Regarding top-performing girls in science, there was no significant change on average across OECD countries or in 68 of the 75 countries and economies with comparable data. Only five countries/economies (Georgia, Montenegro, Chinese Taipei, Türkiye and the United Arab Emirates) recorded increases, all of them under five percentage points. Decreases were observed only in Brunei Darussalam and Czechia, the largest being about two percentage points (Table I.2.13).

Among boys, the share of top performers in science did not change significantly on average across OECD countries or in 62 of 75 countries/economies; it increased in seven systems and decreased in six others. The largest decreases ranged between two and three percentage points in Denmark, Latvia and the Netherlands*. The largest increases were observed in Türkiye and the United Kingdom, at between three and five percentage points.

In reading, the percentage of girls who scored below proficiency Level 2 was 25% in 2025, representing an increase of 4 percentage points on average across 35 OECD countries between 2022 and 2025. This pattern was observed in 28 countries and economies. Yet in most systems, the share did not change between the two cycles. In 8 countries and economies, the share decreased (Table I.B1.2c.34).

A significant increase was also observed among boys. Between 2022 and 2025, the share of low-performing boys in reading was 36%, representing an increase of 6 percentage points on average across OECD countries. Most countries and economies (44) saw an increase, while the share decreased in 8 countries/economies.

Table I.2.13. Change between 2022 and 2025 in low- and top performers in science, by gender

	Change in percentage of low performers		Change in percentage of top performers	
	Girls	Boys	Girls	Boys
Uzbekistan	-49.7	-42.5	0.6	0.4
Jordan	-14.9	-19.5	0.1	0.3
Georgia	-20.2	-19.1	0.5	0.7
Cambodia	-24.8	-18.6	0.0	0.0
Montenegro	-16.1	-14.3	0.7	1.1
Thailand	-11.2	-12.8	0.3	0.2
Saudi Arabia	-13.7	-12.3	0.3	0.4
United Arab Emirates	-8.9	-10.9	1.0	2.3
Philippines	-8.3	-9.5	0.0	0.1
El Salvador	-5.4	-6.6	-0.1	0.1
Costa Rica	-7.2	-5.6	0.0	0.0
Türkiye	-4.9	-5.2	2.8	4.3
Malaysia	1.7	-4.7	0.0	0.0
Mongolia	-8.7	-4.3	0.2	0.0
Dominican Republic	-1.6	-3.7	0.0	0.0
Slovak Republic	-4.2	-3.6	0.2	1.5
United Kingdom	-2.2	-3.2	1.5	3.4
Uruguay	-6.4	-3.0	0.3	-0.3
Qatar	1.0	-2.6	-0.7	0.4
Indonesia	-2.7	-2.6	0.0	0.0
Italy	-1.3	-2.0	0.2	0.2
Lithuania	-2.2	-1.9	0.2	-1.5
Brazil	-4.1	-1.7	-0.3	-0.2
New Zealand*	-1.2	-1.6	1.9	0.7
Moldova	-3.5	-1.4	0.4	0.4
Colombia	-1.4	-1.4	0.0	0.3
Australia	-1.2	-1.1	-0.5	-0.9
Estonia	0.5	-0.8	-0.4	0.0
Brunei Darussalam	4.5	-0.7	-1.0	-0.5
Mexico	-1.9	-0.3	0.0	0.2
North Macedonia	-1.8	-0.1	0.2	0.1
United States*	0.9	-0.1	1.9	2.2
Hungary	2.2	0.0	-1.3	-1.3
Austria	-3.4	0.3	1.4	0.8
Iceland	4.6	0.3	-0.1	0.9
Canada*	1.7	0.5	-1.4	-1.4
Peru	-0.7	0.6	-0.1	-0.5
Morocco	2.7	0.8	0.1	0.1

	Change in percentage of low performers		Change in percentage of top performers	
	Girls	Boys	Girls	Boys
Korea	0.3	0.8	-1.4	-0.6
Netherlands*	-1.4	0.9	-1.0	-2.7
Macao (China)	0.0	0.9	0.1	-0.6
Poland	1.6	1.1	-0.5	-0.6
Chile	-0.7	1.1	-0.4	-0.3
Romania	2.2	1.2	0.5	0.3
Ukrainian regions (17 of 27)	-0.2	1.2	0.0	0.0
Norway*	1.8	1.2	-1.6	-1.5
Bulgaria	-2.4	1.3	0.9	1.0
OECD average-35	1.0	1.4	-0.2	-0.4
Finland	1.5	1.4	-1.9	-1.6
Kosovo	-2.8	1.5	0.0	0.0
Belgium	0.2	1.6	0.2	-0.1
Chinese Taipei	-0.2	1.7	4.5	0.3
Ireland	2.4	1.8	0.4	-0.7
Czechia	0.9	1.9	-2.1	-1.8
Switzerland	1.4	1.9	1.3	0.0
Japan	4.5	2.1	-1.5	-0.4
Kazakhstan	3.3	2.3	-0.2	-0.5
Sweden	1.3	2.4	-0.8	-1.8
France	1.4	2.5	-0.7	-1.4
Singapore	1.2	2.9	2.5	0.9
Germany	4.9	3.0	0.0	-0.5
Portugal	2.1	3.1	0.6	1.0
Spain	2.1	4.1	-0.6	-0.9
Paraguay	4.7	4.4	0.0	0.0
Greece	2.9	4.4	0.1	-0.2
Argentina	4.9	5.6	0.1	0.1
Hong Kong (China)	10.9	5.6	-2.2	-1.0
Croatia	0.1	5.8	-1.1	0.0
Denmark	4.9	6.0	-1.7	-2.8
Guatemala	6.3	6.3	0.0	0.0
Palestinian Authority	7.7	6.6	0.0	0.0
Slovenia	5.3	7.6	-1.4	-1.4
Malta	5.0	7.8	0.6	0.4
Israel	6.2	9.8	-0.5	-2.4
Serbia	5.8	10.1	-0.5	-1.4
Latvia	9.5	13.3	-0.5	-2.5

Negative change in percentage of low performers.
Positive change in percentage of top performers.
Non-significant change.
Positive change in percentage of low performers.
Negative change in percentage of top performers.

Source: OECD, PISA 2025 Database, Tables I.B1.2c.32 and I.B1.2c.33.

Moreover, the percentage of top-performing girls – those who scored at Level 5 or above in reading – was 7% on average across 35 OECD countries, representing a decrease of 2 percentage points relative to 2022. While 20 countries and economies showed declines, in 54 systems, the share remained unchanged between the two cycles. Only in Türkiye was there an increase, of 3 percentage points (Table I.B1.2c.35).

Among boys, the findings are similar to those observed among girls: about 5% of boys reached top performance in reading in 2025, on average across OECD countries, representing a decline of 2 percentage points relative to 2022. In 27 systems, the share also declined. Here too, in most countries (47) the share remained unchanged, while in Türkiye it increased by 2 percentage points.

In mathematics, the percentage of girls who scored below proficiency Level 2 was 35% in 2025, representing an increase of 5 percentage points on average across 35 OECD countries between 2022 and 2025. This pattern was observed in 36 countries and economies. Yet in 33 systems, the share did not change between the two cycles. In 6 countries and economies, the share decreased (Table I.B1.2c.36).

A significant increase was also observed among boys. Between 2022 and 2025, the share of low-performing boys in mathematics was 32%, representing an increase of 3 percentage points on average across OECD countries. In 23 countries/economies, the share increased, while it did not change in 41 and decreased in 11 countries/economies.

Moreover, the percentage of top-performing girls – those who scored at Level 5 or above in mathematics – was 6% on average across OECD countries, representing a small decrease of less than 1 percentage point relative to 2022. While 13 countries and economies showed similar declines, in 60 systems the share remained unchanged between the two cycles. Only in Türkiye and the United Arab Emirates were increases observed, of 1 and 2 percentage points, respectively (Table I.B1.2c.37).

Among boys, the picture is similar to that observed among girls: about 10% of boys reached top performance in mathematics in 2025, on average across OECD countries, representing a decline of 1 percentage point relative to 2022. In 14 systems, the share also declined. Here too, in most countries and economies (58) the share remained unchanged, while in the Slovak Republic, Türkiye and the United Arab Emirates it increased by between 2 and 4 percentage points.

Fairness in terms of student immigrant background

A fair education system gives students with an immigrant background an equal opportunity to thrive at school and realise their full learning potential compared to those without an immigrant background. PISA defines immigrant students as students whose mother and father were both born in a country/economy other than that where the student took the PISA test. Non-immigrant students are students who have at least one parent born in the country of assessment. This section examines the extent to which the countries and economies that participated in PISA 2025 ensure that all students are on a level playing field, regardless of their background.

Overall, the results presented in this chapter show that non-immigrant students tend to outperform immigrant students in all PISA subjects in many, though not all, countries and economies. However, this raw performance gap is rarely a function of immigrant status alone. Instead, these students often navigate intersecting layers of disadvantage (Bowleg, 2012[48]; Cerna et al., 2021[49]) In some countries and economies, students with an immigrant background are disproportionately likely to come from socio-economically disadvantaged families compared to non-immigrant students (OECD, 2023[3]). Furthermore, a significant proportion of these students face the additional challenge of navigating an education system in a language different from the one they speak at home, a challenge that is particularly acute for first-generation immigrants and for those who arrive to a new country/economy later on in their educational trajectories (OECD, 2023[3]).

Once socio-economic status and the language spoken at home are taken into account, the picture often changes. In many education systems, immigrant students actually outperform their non-immigrant peers, demonstrating remarkable academic resilience and a strong drive to succeed (Cerna et al., 2021[49]; OECD, 2023[3]). This reversal suggests that the educational vulnerabilities associated with an immigrant background are not inevitable, but are instead largely shaped by features of education systems, as well as linguistic barriers.

Moreover, several countries and economies combine a large share of students with an immigrant background (i.e. over 30% of students) with high average levels of performance (Australia, Canada*, Macao (China), New Zealand* and Singapore) (Tables I.B1.2d.1 and I.B1.2d.10). PISA results support the view that policies aimed at dismantling cultural and linguistic barriers – through targeted language support, intercultural education, and the promotion of inclusive school climates that value diversity – can improve the outcomes of immigrant students (Cerna et al., 2021[49]; OECD, 2023[3]; Tarozzi, 2012[50]). At the same time, these results should be interpreted in light of differences in immigrant student profiles across countries and economies. In some systems, immigration policies and selection mechanisms may shape the socio-economic background, language proficiency and other characteristics of immigrant populations, and may partly explain the positive outcomes observed among immigrant students.

Education systems around the world vary greatly in terms of how large their immigrant student population is (Table I.B1.2d.1). In almost half of the countries and economies in PISA 2025 (42 out of 87), the share of 15-year-old students with an immigrant background is small (less than 5%). But in 24 countries and economies, the share of immigrant students is higher than 15%; in 14 countries and economies it is higher than 25%; and in Luxembourg, Macao (China), Qatar and the United Arab Emirates, more than half of students have an immigrant background. On average across 29 OECD countries with available data, 18% of students have an immigrant background. The composition of immigrant student populations can also vary considerably within countries and economies, with students differing by country of origin, language spoken at home, socio-economic background, and cultural proximity to the host country. As a result, average outcomes for students with an immigrant background may mask important differences between immigrant sub-groups within the same education system.

Students with an immigrant background can be distinguished between first- and second-generation immigrants. First-generation immigrants are students born outside the country of assessment and whose parents were also born outside the country of assessment. Second-generation students are students born in the country of assessment but whose parent(s) were born outside the country of assessment. The share of second-generation immigrants is 10% and the share of first-generation immigrants 8% on average across OECD countries in PISA 2025 (Table I.B1.2d.1).

These differences in the size and composition of immigrant student populations provide important context for interpreting performance gaps between immigrant and non-immigrant students across education systems.

Immigrant students and socio-economic status

Students with an immigrant background typically have a more disadvantaged socio-economic profile than non-immigrant students.

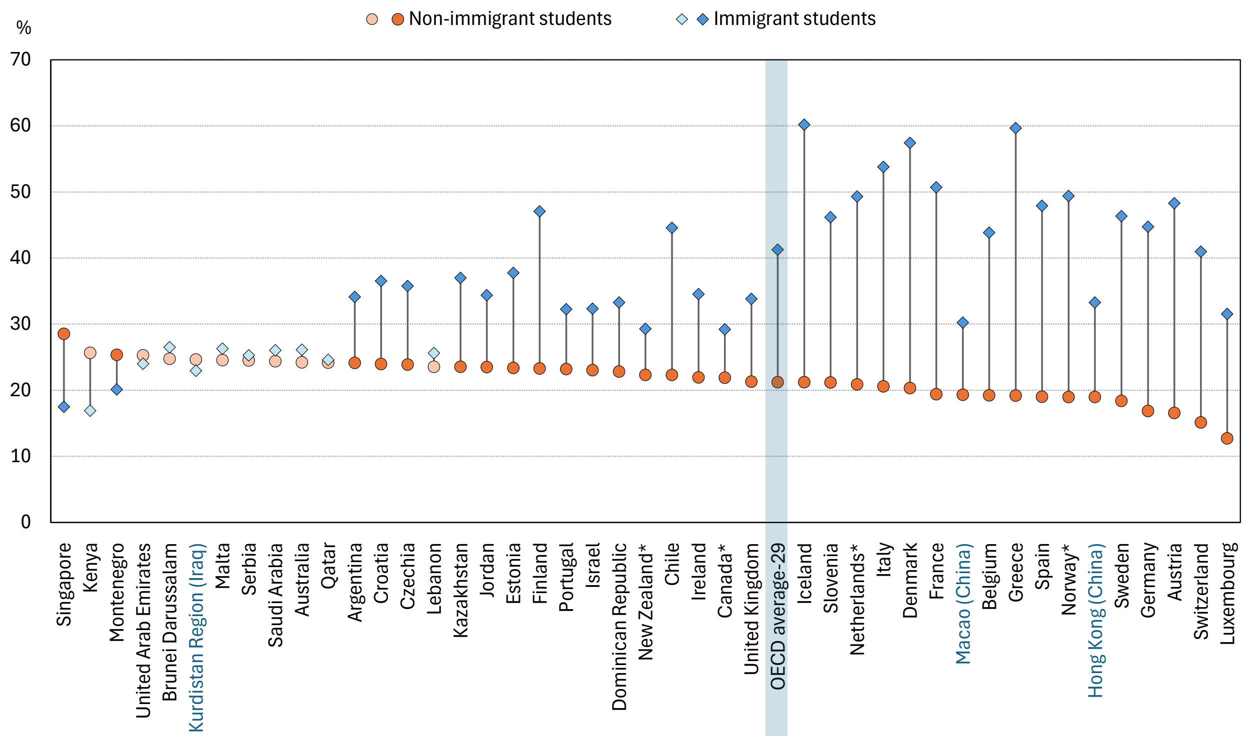
As shown in Figure I.2.21, the share of disadvantaged students is about 41% among immigrant students and 21% among non-immigrant students, on average across 29 OECD countries. When considering countries and economies where at least 5% of students have an immigrant background, in Austria, Denmark, France, Greece, Iceland, Italy, and Norway*, the difference in the share of disadvantaged students by immigration background is the largest, with a gap of more than 30 percentage points, indicating an importantly larger share of immigrant students that are socio-economically disadvantaged (Table I.B1.2d.4).

There are, however, two countries and economies where the opposite pattern is observed, Montenegro and Singapore, where the share of disadvantaged students is greater among non-immigrant than immigrant students by more than 5 percentage points.

In ten of these countries and economies, the share of disadvantaged students is not statistically significantly different by immigration background.

Figure I.2.21. Disadvantaged students, by immigrant background

Percentage of students in the bottom quarter of socio-economic status, by immigrant background



Notes: Only countries and economies where at least 5% of students have an immigrant background are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Socio-economic status is measured by the PISA index of economic, social and cultural status (ESCS).
Countries and economies are ranked in descending order of the percentage of disadvantaged students among non-immigrant students.
Source: OECD, PISA 2025 Database, Table I.B1.2d.4. See https://stat.link/xgs41b for the underlying data.

Immigrant students and language spoken at home

Across OECD countries, on average, most students with an immigrant background speak a language at home that is different from the language in which they took the PISA assessment (Figure I.2.22). This is especially the case for first-generation immigrant students, though not necessarily for second-generation immigrants. This language barrier can be particularly hard to overcome for first-generation immigrant students who not only were born, but in some cases completed part of their education, in countries where the language is different from that of the host country.

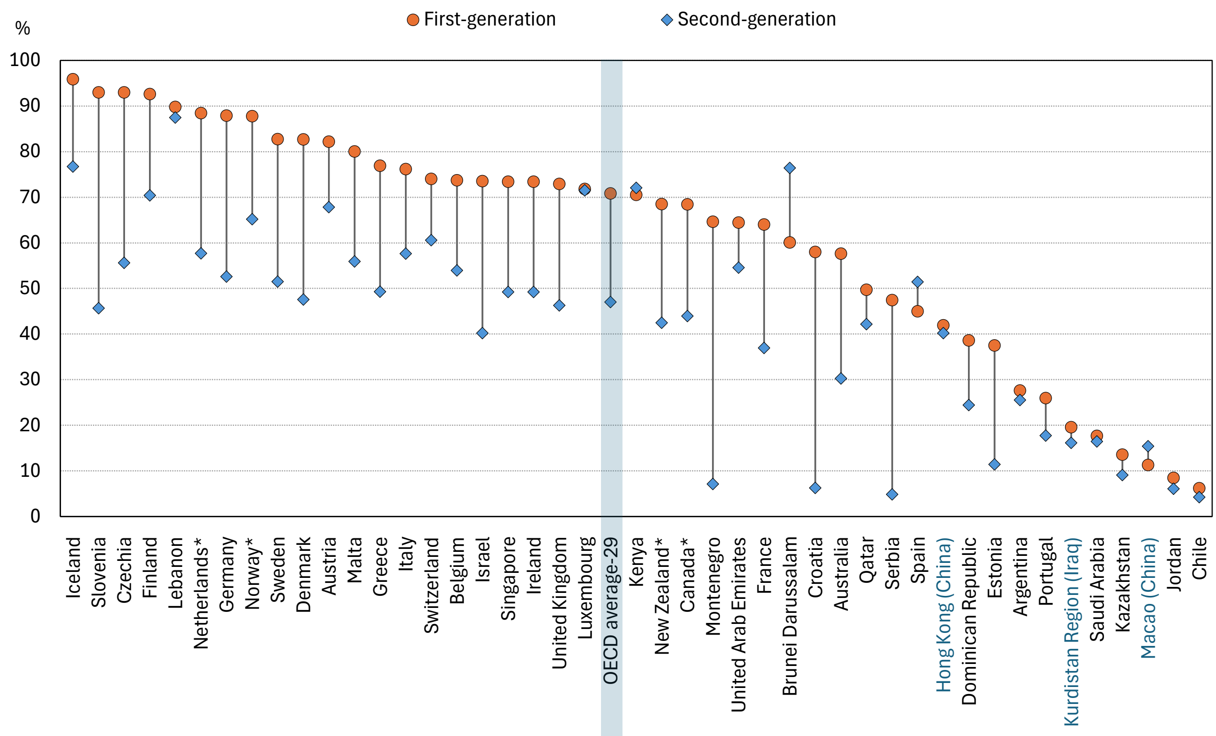
In 2025 and earlier assessments, PISA asked students which language they spoke at home most of the time. On average across 29 OECD countries with comparable data in PISA 2025, 16% of all students (regardless of their immigrant background) speak a language at home that is different from the language in which they took the PISA assessment (Table I.B1.2d.6). This proportion is greater among immigrant students than non-immigrant students, on average across 29 OECD countries (a difference of 53 percentage points) and in 67 out of 87 countries/economies with available data (including countries/economies where less than 5% of students have an immigrant background) (Table I.B1.2d.6).

Among first-generation immigrant students, the percentage of students who mainly speak another language at home is 71% on average across 29 OECD countries, whereas it is 47% among second-generation immigrant students (Table I.B1.2d.6). As shown in Figure I.2.22, in Czechia, Finland, Iceland and Slovenia more than 90% of first-generation immigrant students reported that they mainly speak another language at home. In Lebanon, about 87% of second-generation immigrant students mainly speak another language at home.

These differences in socio-economic profile and language spoken at home help explain why raw performance gaps between immigrant and non-immigrant students should not be interpreted as reflecting immigrant background alone.

Figure I.2.22. Immigrant students who do not speak the language of assessment at home

Percentage of first- generation and second- generation immigrant students who do not speak the language of assessment at home



Notes: Only countries and economies where at least 5% of students have an immigrant background are shown.

Countries and economies are ranked in descending order of the percentage of first-generation immigrant students who do not speak the language of assessment at home.

Source: OECD, PISA 2025 Database, Table I.B1.2d.6. See https://stat.link/xgs41b for the underlying data.

Proportion of students with immigrant background and systems' average performance

PISA 2025 provides no basis for the claim that larger proportions of students with an immigrant background are related to poorer education outcomes in host countries.

PISA data show a positive relationship between the share of immigrant students and mean performance in science in PISA 2025, meaning that, on average, countries with larger shares of immigrant students also tend to show higher mean performance in science. Among countries that have between 5 and 15 percent of immigrant students, there is wide variation in mean performance; for example, Estonia and Iceland have similar shares of immigrant students (about 10%) but very different mean performances in science (441 points in Iceland and 527 in Estonia). By contrast, among countries/economies where the share of immigrant students is between 15% and 40%, the correlation is much stronger: Australia, Canada*, New Zealand* and Singapore, are examples of countries/economies that receive many immigrant students and show strong performances (Tables I.B1.2a.1 and I.B1.2d.6).

Luxembourg, Macao (China), Qatar and the United Arab Emirates and are outliers in the sense that their share of immigrant students is much higher (i.e. more than 50% of the student population) than that of all other PISA-participating countries/economies. Each should therefore be examined in its own context (i.e. the social and demographic profile of the immigrant population, immigration policies, and educational policies towards immigrant students). Macao (China) has one of the highest levels of science performance; by contrast, Luxembourg, Qatar and the United Arab Emirates performed below the OECD average in science (Tables I.B1.2a.1 and I.B1.2d.10).

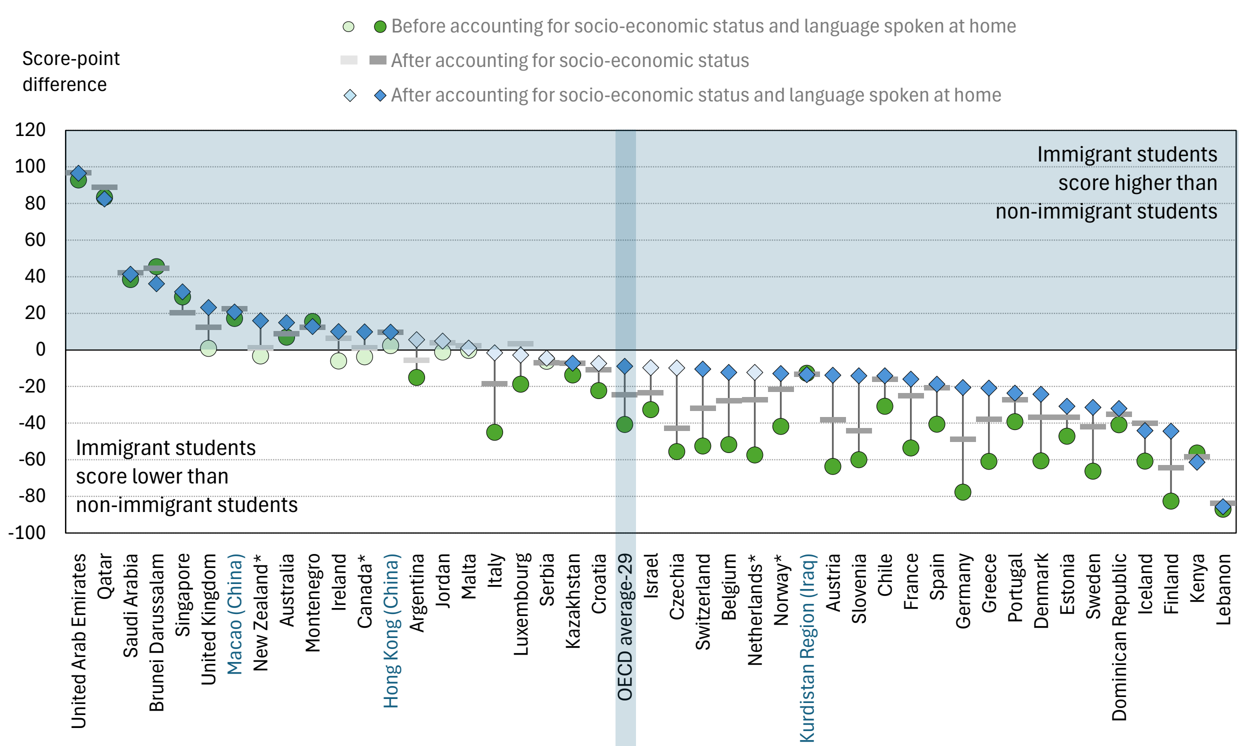
These results should be interpreted carefully because they do not take national income into account, even though national income is correlated with both mean performance and the share of immigrant students. After accounting for national income, the correlation between the share of immigrant students and mean performance in science in PISA 2025 becomes very weak or close to zero.

Performance gap according to student's immigrant background

When student performance is compared between immigrant and non-immigrant students within countries and economies, net differences (i.e. differences after accounting for socio-economic and linguistic backgrounds) in science performance by immigrant background are typically smaller than raw differences (i.e. before accounting for these backgrounds) (Figure I.2.23). Immigrant students tend to have more disadvantaged socio-economic status and a home language more likely to be different from the language of instruction in their schools.

Figure I.2.23. Differences in science performance, by immigrant background

Difference in science score between non-immigrant students and immigrant students (immigrant students - non-immigrant), before and after accounting for socio-economic status and language spoken at home



Notes: Only countries and economies where at least 5% of students have an immigrant background are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Socio-economic status is measured by the PISA index of economic, social and cultural status (ESCS).
Countries and economies are ranked in descending order of the gap in science performance related to immigrant background, after accounting for students' socio-economic status and language spoken at home.
Source: OECD, PISA 2025 Database, Table I.B1.2d.10. See https://stat.link/xgs41b for the underlying data.

As shown in Figure I.2.23, in two countries (Argentina and Luxembourg), non-immigrant students outperformed immigrant students in science before accounting for other variables, but after accounting for student socio-economic status, the net score-point difference was no longer statistically significant.

After accounting for students' socio-economic status and language spoken at home, immigrant students scored higher in science than non-immigrant students in 13 countries/economies, while non-immigrant students scored higher in science than immigrant students in 21 countries/economies (as on average across 29 OECD countries with comparable data). The difference between immigrant and non-immigrant students is not statistically significant in 10 countries/economies after accounting for students' socio-economic status and language spoken at home.

In reading and mathematics, patterns similar to those observed in science are found.

Trends in disparities in performance by immigrant background

Between 2022 and 2025, disparities in science performance by students' immigrant background remained unchanged, on average across 29 OECD countries, after accounting for students' socio-economic status and language spoken at home (Table I.B1.2d.10). They only widened in favour of immigrant students in Qatar and Singapore, among countries with more than 5% of immigrant students in PISA 2025.

In Qatar, the gap in science performance increased by 12 score points, after accounting for students' socio-economic status and language spoken at home, between 2022 and 2025. In Singapore, the gap in science performance in terms of immigrant background more than doubled from 15 score points in 2022 to 32 score points in 2025 (Table I.B1.2d.10).

In the same period, among countries with more than 5% of immigrant students, disparities in science performance widened in favour of non-immigrants in Iceland, Portugal and Spain, after accounting for students' socio-economic status and language spoken at home. Particularly large increases occurred in Iceland and Portugal (28 and 14 score points, respectively), where there were no such disparities in PISA 2022 (Table I.B1.2d.10).

Finally, in Serbia, disparities in favour of immigrant students shrank and became non-significant between 2022 and 2025, after accounting for students' socio-economic status and language spoken at home. In Hong Kong (China), disparities in favour of immigrant students also decreased in the same period, although they remained significant after accounting for students' socio-economic status and language spoken at home (Table I.B1.2d.10).

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StatLink https://stat.link/xgs41b

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Notes

[1] In PISA 2025, computational problem solving is a key component of the Learning in the Digital World (LDW) framework. LDW refers to students' capacity to engage in iterative and self-regulated knowledge building and

problem solving using computational tools and practices. Computational problem solving provides the operational basis for this process. It is through computational problem solving that students construct and refine executable digital artefacts — for example, models or algorithms — that allow them to explore problems, test solutions and build understanding in digital environments.

[2] When comparing mean performance across countries/economies, only differences that are statistically significant should be considered (see Box 1 in Reader's Guide)

[3] The standard deviation summarises variation in performance among 15-year-old students within each country/economy. The average standard deviation in science performance within OECD countries is 99 score points. If the standard deviation is larger than 99 score points, it indicates that student performance varies more from a particular country's/economy's average performance than it varies internationally. A smaller standard deviation means that student performance varies less in a country/economy than it varies internationally

[4] The self-regulation component of the PISA 2025 Learning in the Digital World assessment will be analysed in a separate report.

[5] The explained variance is the R squared from a regression of computational problem-solving on science performance, gender and students' and schools' socio-economic profile. The variation uniquely associated with science performance is measured as the difference between the R squared of the full regression and the R squared of the same regression without science performance. A smaller proportion of the variation in student performance – around 14% – can be accounted for by student gender and student and school socio-economic profile (i.e. student background variables).

[6] Relative performance is determined through a cubic polynomial regression. This regression analysis predicts a student's computational problem-solving score based on their science, mathematics or reading score using data pooled from all participating countries. The calculation produces a "residual" score. This is the difference between the student's *actual* computational problem-solving score and the *predicted* (expected) score generated by the model.

[7] The same analysis was performed for reading and mathematics. The results are available, together with those for science, in Table I.B1.2a.20.

[8] Cambodia, Guatemala and Paraguay participated for the first time in PISA in 2017 as part of the PISA for Development initiative. Therefore, the first reference year in the analysis of trends in these systems is 2017. The first reference year for Ecuador and El Salvador is 2022.

[9] For the countries and economies that participated in PIAAC Cycle 1 in 2011-12, the PISA 2009 cohort represents the youngest PISA cohort that could subsequently be observed in PIAAC. The analysis therefore follows such cohorts across three points in time: PISA 2009 (15-year-olds), PIAAC Cycle 1 (ages 18 to 25) and PIAAC Cycle 2 (ages 29 to 31). The terms "early adulthood" and "around age 30" refer to the ages at which these birth cohorts were assessed in the two rounds of PIAAC.

[10] Comparisons across percentiles refer to changes at selected points of the score distribution across cycles. They should not be interpreted as tracking the same individuals over time or as assuming that individuals remain at the same percentile. References to gains or declines at the lower, middle or upper parts of the distribution refer to changes in distributional positions, not to fixed groups of adults.

[11] The Coverage Index 3 (CI3) in PISA is the weighted number of participating students divided by the total population of 15-year-olds. Low values of CI3 may reflect 15-year-olds who are not enrolled in school, who are enrolled below Grade 7, who dropped out during the school year, or who were excluded from the PISA assessment. For this reason,

CI3 should be interpreted as a measure of PISA population coverage, rather than as a direct measure of inclusion in education.

When estimating the share of all 15-year-olds who have not reached baseline proficiency, the analysis assumes that 15-year-olds not covered by the assessed PISA sample would perform below Level 2. This assumption should be interpreted as a conservative sensitivity assumption, not as an observed result for excluded students. It is likely to be more plausible for 15-year-olds who are not enrolled, enrolled below Grade 7, or who have dropped out, than for students excluded from the assessment for other reasons. In countries where assessment exclusions account for a sizeable share of non-coverage, the resulting estimates should therefore be interpreted with caution.

[12] The assumption that 15-year-olds not covered by the PISA sample would perform below Level 2 is supported by evidence from PISA for Development, which assessed 14- to 16-year-olds who were not in school or were enrolled below the PISA target grades. In the five countries that participated in the PISA for Development out-of-school assessment, only a very small share of these youth reached Level 2 in reading or mathematics. This suggests that, where non-coverage reflects non-enrolment, dropout or delayed progression below Grade 7, assuming that non-covered 15-year-olds are below baseline proficiency is plausible (Ward, 2020[51]).

[13] The slope of the socio-economic gradient indicates the degree of the disparity in average performance between two students whose socio-economic status differs by one unit in the PISA index of economic, social and cultural status. A positive value for the slope of the socio-economic gradient signals that advantaged students generally performed better than disadvantaged students in PISA 2025.

[14] The multidimensional deprivation indicator is based on PISA 2025 data and is a simple aggregated indicator based on binomial variables designed to capture essential items and activities that students lack due to financial constraints, rather than tallying the technological or cultural goods they possess. It directly complements the traditional ESCS index, which often fails to accurately measure living conditions or deep poverty in lower-income contexts.

[15] This indicator only considers having second-hand clothes when students reported that this is due to a lack of economic resources and therefore not by choice.

[16] The items included in the material dimension are intended to capture more severe forms of deprivation, while those in the social dimension capture a wider form of exclusion from everyday opportunities. The bath/shower item can be described as having strong discriminatory value because it helps distinguish students at the most deprived end of the distribution. The items on shoes and new clothing may capture somewhat less extreme, but still basic, forms of deprivation, making the indicator sensitive to deep poverty. By contrast, lacking outdoor equipment, indoor games or the possibility of participating in paid leisure activities points to constraints on students' participation in social and cognitively stimulating activities. A key strength of these measures is that most of the relevant PISA items identify enforced lack: students report lacking the item because their parents cannot afford it, rather than because of preference or choice. This is an important methodological principle in deprivation measurement, since robust indicators need to distinguish affordability constraints from voluntary non-consumption (Boarini and Mira d'Ercole, 2006[41]).

[17] The share of students reporting either material or social deprivation is highest among those in the bottom quarter of the socio-economic distribution, and declines progressively among students in the second and third quarters and, further still, among socio-economically advantaged students (Table I.B1.2b.20).

3 Student attitudes towards learning

This chapter examines students' beliefs and attitudes concerning learning and their sense of belonging at school, as reported in PISA 2025, and how these aspects can either support or undermine their engagement with learning, and their ability to adapt to changing societal demands. It explores curiosity and perseverance as indicators of students' motivation to learn, and self-directed help seeking and goal setting as indicators of student agency.
It also investigates learning-related beliefs, behaviours, instructional experiences and psychological barriers regarding the translation of motivation into agency and effective learning. The chapter considers how engagement and disengagement fit into students' broader sense of belonging at school and how they value school, and the relationship this can have with their future-readiness and capacity for lifelong learning.

What the data tell us

Interrelationships in student engagement

- The different dimensions of student engagement in learning examined in this chapter are interrelated. Table 3.1. shows a summary of those relationships. Overall, students who report higher levels in one dimension tend to report higher levels in others. In addition, these dimensions are positively associated with student performance in the PISA science assessment, which is another key outcome discussed in Chapter 2.

Findings by student characteristics

- Across the dimensions of engagement analysed in this chapter, girls generally report more positive learning-related attitudes and behaviours than boys, although not across all dimensions. On average across OECD countries, girls report higher levels of curiosity and perseverance than boys, and they are also more likely to report stronger help-seeking and goal-setting attitudes. Girls report a growth mindset slightly more often than boys, although gender differences in this dimension are generally small and, in many systems, not statistically significant. By contrast, boys report higher cognitive adaptability than girls in a number of countries and economies, and they also tend to report a stronger sense of belonging at school, both on average across OECD countries and in most participating systems. Interestingly, girls are more likely than boys to see the value of school for the future, for example, they are more likely to report that school has taught them things that could be useful in a job.
- Socio-economic differences, by contrast, are more systematic across dimensions and across countries and economies. In most participating systems, advantaged students report more curiosity, perseverance and a growth mindset compared to their disadvantaged peers. The same broad pattern is observed for cognitive adaptability, help seeking and goal setting. Socio-economically advantaged students also report a stronger sense of belonging at school and while they are more likely to report that school has taught them things that could be useful in a job in a number of systems, most often there are no significant differences between advantaged and disadvantaged students.

PISA 2025 data provide a solid base to analyse students' engagement in learning, which is fundamental to developing their future-readiness and capacity to adapt to shifting societal demands and a rapidly changing labour market. The attitudes, beliefs and ways of engaging with learning examined in this chapter are outcomes in their own right; they reflect students' experiences both in and outside of school. The chapter therefore examines whether students are developing the dispositions and strategies that can support lifelong learning and the increasingly essential ability to adapt to changing demands and contexts, while it also analyses the role schools play in this development.

The different attitudes analysed here relate to students' engagement with learning. Engagement is commonly conceptualised as a multidimensional construct that captures how students participate in, think about and feel connected to school. It is often described in terms of behavioural engagement (involvement, persistence and positive conduct), cognitive engagement (psychological investment, self-regulation and deep processing) and emotional or social engagement (sense of belonging, supportive relationships and valuing of school) (Fredricks, Blumenfeld and Paris, 2004[1]; Appleton, Christenson and Furlong, 2008[2]; Finn and Zimmer, 2012[3]). This multidimensional approach guides the focus of the analyses in this chapter; for example, on students' motivation or drive to learn, their beliefs about the malleability of their own intelligence and the nature of scientific knowledge, their sense of belonging at school and the value they place on it for their future.

Another key dimension is student agency, which is closely related to cognitive and social engagement with learning. Agency concerns the extent to which students can act purposefully within their learning environment (Reeve, 2012[4]). Rooted in self-determination theory, it refers to students' capacity to exercise autonomy through choice, volition and meaningful participation in learning (Deci and Ryan, 2000[5]; Reeve and Tseng, 2011[6]). Agency is treated here as a distinct dimension of engagement, wherein students make proactive and constructive contributions to their learning; for example, by verifying and adapting their approaches to learning or to seeking help. Agency does not simply reflect individual disposition; it also includes whether students are given opportunities to exercise choice and take ownership of their learning. In this sense, it helps to illustrate how motivation, beliefs and school experiences interact to shape the depth of students' engagement with learning (Assor, 2012[7]; Cleary and Zimmerman, 2012[8]; Reeve, 2012[4]).

This framework provides a useful basis for organising the analyses in this chapter across four analytical groupings:

- Students' drive to learn, captured here through curiosity for learning (or intrinsic motivation) and perseverance, dispositions that can support effort and persistence in the face of challenge.
- Learning-related beliefs and behaviours, including beliefs about one's own ability to progress (or growth mindset), more general beliefs about knowledge and science, and students' capacity to adapt their thinking and learning strategies when faced with challenge or uncertainty (or cognitive adaptivity), which stand at the base of student agency.
- Self-regulated learning, which shapes how motivation is translated into agency through strategic thinking and psychological investment in learning.
- Students' beliefs about the value of school and their sense of belonging at school. Together, these dimensions reflect whether students regard school as worthwhile and experience it as a place where they feel accepted, included and valued, which can strengthen their emotional connection to learning and help sustain their engagement over time.

Finally, the results presented in this chapter should be interpreted with caution, given indicators in this chapter are based on students' self-reports. Observed cross-country/economy differences should be interpreted carefully, as these differences may reflect variations in response behaviour rather than true underlying differences. Cultural norms, as well as differing interpretations of and reactions to questionnaire items can influence how students understand and answer questions.[1]

Table I.3.1. Summary of relationships across the student attitudes measured in PISA 2025

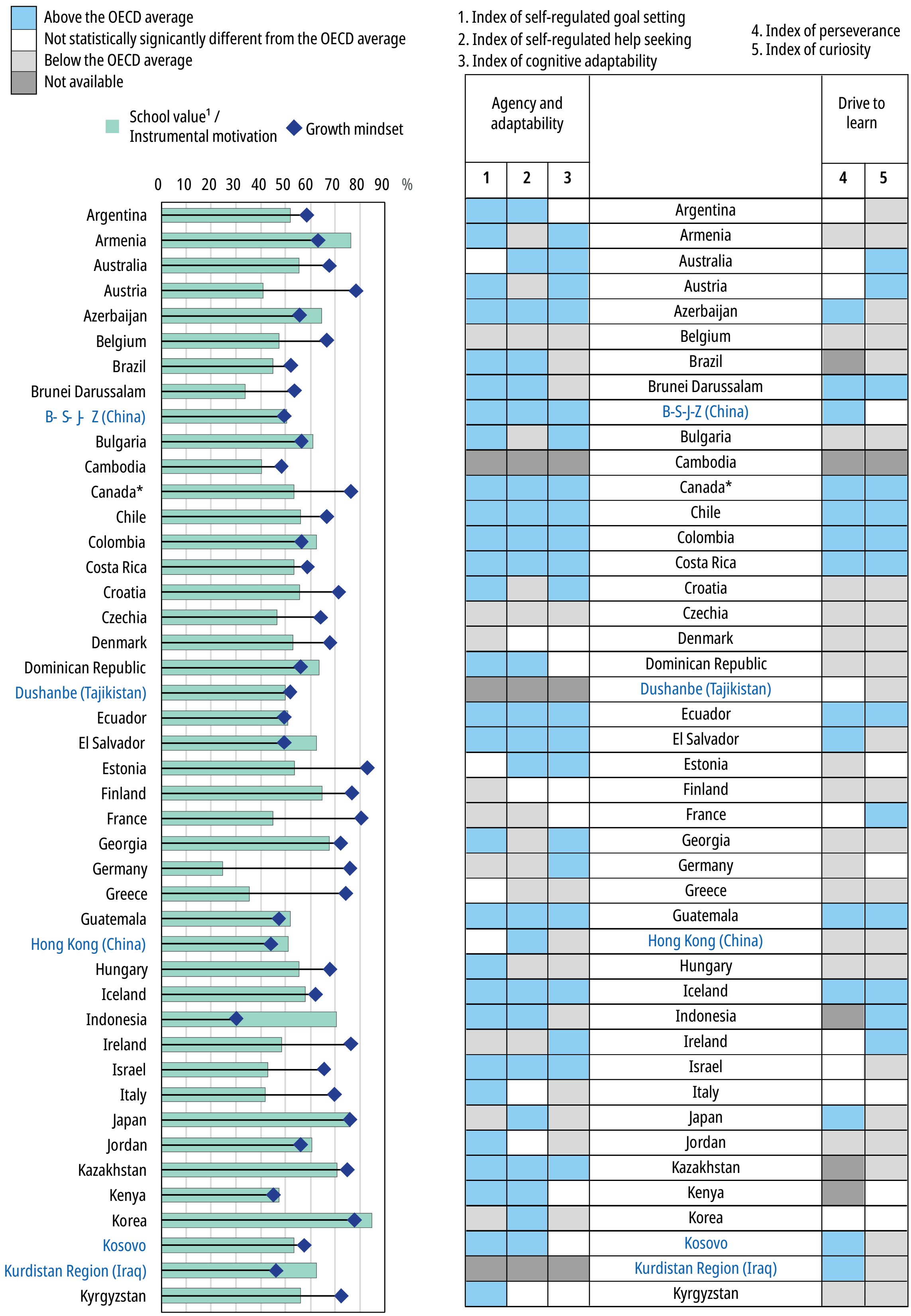
positive in all systems
positive in larger group of countries/economies
positive on average, but uneven
mixed / divergent / item-dependent
little or no clear overall relationship
not explicitly examined —

P weakens once performance is taken into account
T teacher support strengthens the relationship
A agency strengthens the relationship
I important item-level variation

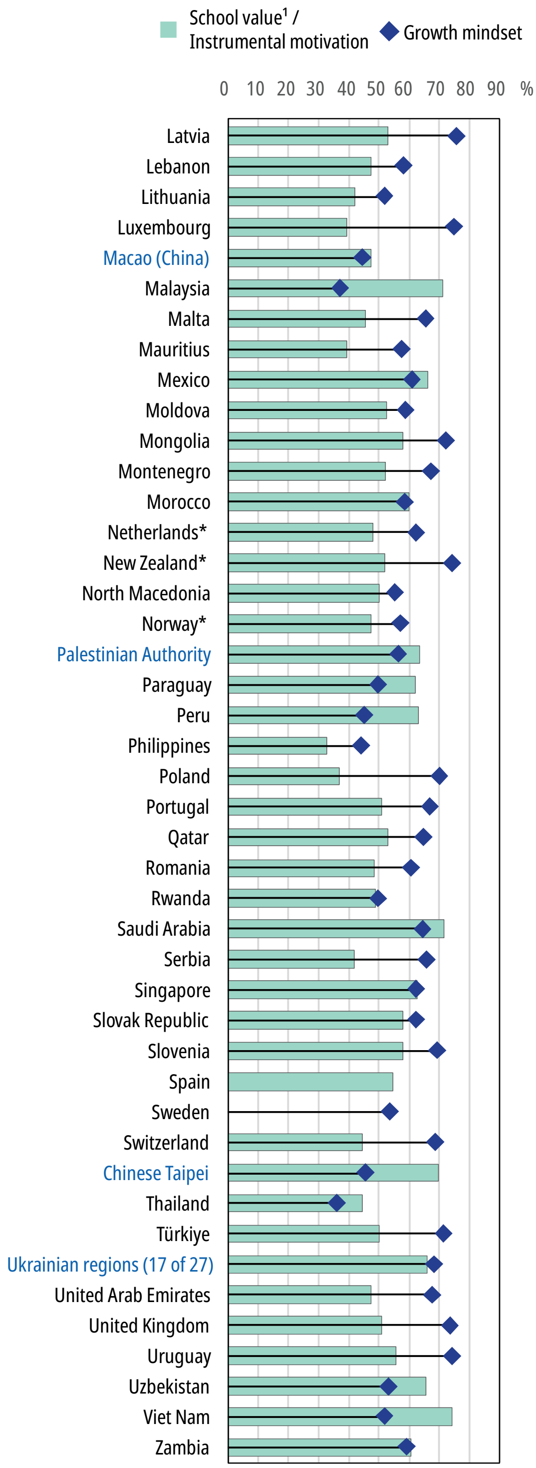
	Perseverance	Growth mindset	Beliefs about the nature of science	Cognitive adaptability	Self-regulated help seeking	Self-regulated goal setting	Sense of belonging	School value / Instrumental motivation	Science performance
Curiosity	positive in all systems	positive in larger group of countries/economies; P	positive in all systems; P	positive in larger group of countries/economies	positive in larger group of countries/economies	positive in all systems; T	positive in larger group of countries/economies; T	mixed / divergent / item-dependent	positive in all systems; A
Perseverance		positive in larger group of countries/economies; P	positive in all systems; P	positive in larger group of countries/economies	positive in larger group of countries/economies	positive in all systems	positive in all systems; T	positive in all systems; P	positive in larger group of countries/economies; A
Growth mindset			positive in larger group of countries/economies; P	positive in larger group of countries/economies	positive in larger group of countries/economies	positive on average, but uneven	positive in larger group of countries/economies	positive in larger group of countries/economies; I	positive in larger group of countries/economies
Beliefs about the nature of science				positive on average, but uneven	positive in larger group of countries/economies	—	positive in larger group of countries/economies	—	positive in all systems
Cognitive adaptability					—	—	positive in all systems	little or no clear overall relationship	positive in larger group of countries/economies; I
Self-regulated help seeking						—	positive in all systems	positive in larger group of countries/economies	positive in larger group of countries/economies; I
Self-regulated goal setting							positive in larger group of countries/economies	positive in larger group of countries/economies	mixed / divergent / item-dependent; I
Sense of belonging								positive in larger group of countries/economies	positive in larger group of countries/economies; I
School value / Instrumental motivation									positive in larger group of countries/economies; I

Note: The relationships presented in this table are after accounting for gender, students' and schools' socio-economic profile. They provide a general overview, which may differ from one system to another. Interpretations of this summary should be approached with caution.
Source: OECD, PISA 2025 Database Tables I.B1.3.4, I.B1.3.7, I.B1.3.12, I.B1.3.15, I.B1.3.18, I.B1.3.20, I.B1.3.25, I.B1.3.33, I.B1.3.35,I.B1.3.43, I.B1.3.46, I.B1.3.47, I.B1.3.51, I.B1.3.52, I.B1.3.66, I.B1.3.68, I.B1.3.74, I.B1.3.76, I.B1.3.77, I.B1.3.78.

Figure I.3.1. Mean country-level results for selected dimensions



Above the OECD average
Not statistically signicantly different from the OECD average
Below the OECD average
Not available



1. Index of self-regulated goal setting
2. Index of self-regulated help seeking
3. Index of cognitive adaptability
4. Index of perseverance
5. Index of curiosity

Agency and adaptability				Drive to learn	
1	2	3		4	5
Above	Below	Below	Latvia	Below	Not sig.
Above	Below	Below	Lebanon	Not sig.	Not sig.
Above	Below	Not sig.	Lithuania	Below	Not sig.
Not sig.	Below	Not sig.	Luxembourg	Below	Not sig.
Below	Above	Below	Macao (China)	Below	Not sig.
Above	Above	Below	Malaysia	Above	Above
Above	Not sig.	Above	Malta	Above	Above
Not available	Not available	Not available	Mauritius	Above	Above
Above	Above	Above	Mexico	Above	Above
Above	Not sig.	Not sig.	Moldova	Below	Below
Above	Above	Not sig.	Mongolia	Below	Above
Above	Not sig.	Above	Montenegro	Below	Below
Above	Above	Above	Morocco	Not sig.	Below
Below	Below	Below	Netherlands*	Below	Below
Below	Above	Below	New Zealand*	Not sig.	Above
Above	Below	Above	North Macedonia	Above	Below
Not sig.	Not sig.	Not available	Norway*	Below	Not available
Above	Above	Not sig.	Palestinian Authority	Below	Below
Above	Above	Above	Paraguay	Not sig.	Below
Above	Not sig.	Below	Peru	Above	Above
Above	Above	Below	Philippines	Above	Above
Below	Below	Not sig.	Poland	Below	Below
Above	Above	Below	Portugal	Above	Above
Above	Above	Not sig.	Qatar	Not sig.	Not sig.
Above	Not sig.	Below	Romania	Above	Above
Not available	Not available	Not available	Rwanda	Below	Below
Above	Above	Above	Saudi Arabia	Above	Above
Above	Below	Above	Serbia	Below	Below
Above	Above	Not sig.	Singapore	Above	Above
Not sig.	Below	Below	Slovak Republic	Below	Below
Above	Below	Above	Slovenia	Below	Below
Above	Above	Above	Spain	Above	Above
Above	Above	Not available	Sweden	Not available	Not available
Above	Above	Above	Switzerland	Not sig.	Above
Below	Above	Below	Chinese Taipei	Not sig.	Below
Above	Above	Below	Thailand	Above	Not sig.
Above	Not sig.	Above	Türkiye	Above	Above
Above	Below	Above	Ukrainian regions (17 of 27)	Below	Below
Above	Above	Above	United Arab Emirates	Above	Above
Above	Below	Below	United Kingdom	Below	Above
Below	Above	Below	Uruguay	Above	Not sig.
Above	Above	Above	Uzbekistan	Above	Above
Above	Above	Above	Viet Nam	Above	Above
Not available	Not available	Not available	Zambia	Not available	Above

1. The school value is measured by the percentage of students who disagree or strongly disagree that "School has done little to prepare me for adult life when I leave school".
Notes: Only countries and economies with available data are shown.
Countries and economies are ranked in alphabetical order.
Source: OECD, PISA 2025 Database, Tables I.B1.3.1, I.B1.3.9, I.B1.3.16, I.B1.3.40, I.B1.3.44, I.B1.3.49 and I.B1.3.70. See https://stat.link/143ud5 for the underlying data.

Curiosity and perseverance

Two closely related dimensions of students' drive to learn captured by PISA 2025 data are intrinsic motivation, indicated here through students' curiosity to learn, and perseverance. Intrinsic motivation refers to engaging in learning for its inherent interest, enjoyment or satisfaction (Deci, 2013[9]; Eccles and Wigfield, 2002[10]). Curiosity to learn is closely related to intrinsic motivation, as it helps direct attention and encourages exploration and learning (Hidi and Renninger, 2006[11]; Izard, 2007[12]). In PISA, these two dimensions are treated as closely intertwined in capturing the internal energy and direction that can prompt students to become involved in learning (Cleary and Zimmerman, 2012[8]; Schunk, Pintrich and Meece, 2014[13]).

This drive to learn is expressed behaviourally through perseverance, understood here as a key indicator of sustained engagement with academic tasks, and can serve as a proxy for resilience (Fredricks, Blumenfeld and Paris, 2004[1]; Skinner et al., 2009[14]). Perseverance refers to students' capacity to remain engaged, maintain effort and continue working through difficulty or complexity (Corno and Mandinach, 1983[15]; Skinner and Belmont, 1993[16]). While curiosity may help initiate engagement, perseverance helps sustain it over time. Examining these dimensions together makes it possible to consider not only what may energise students' learning, but also how that energy is carried into action and maintained in ways that support progress at school (Frydenberg, 2005[17]).

As shown in Table I.3.1, student curiosity and perseverance are closely related dimensions of the drive to learn. Across many systems, students who report greater curiosity also tend to report greater perseverance, and changes over time in some indicators of curiosity and perseverance suggest that the two may weaken in parallel.

Curiosity to learn

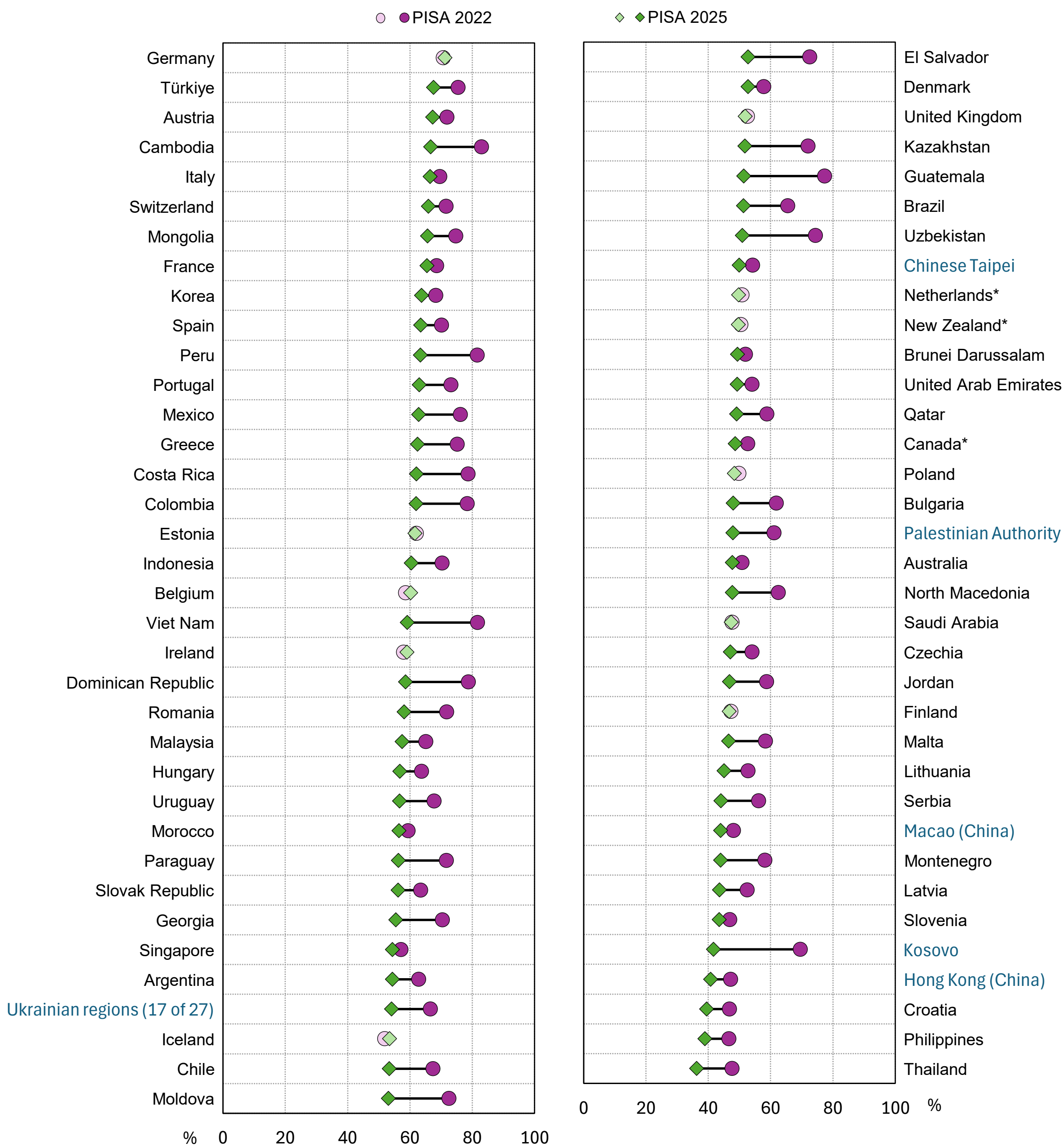
PISA data capture the drive or curiosity to learn through several complementary questions. It asks students whether they like learning new things, if they find learning new things to be boring, whether they like to know how things work, whether they are curious about different things and whether they feel more curious than most people they know.

The PISA 2025 results show that, on average across OECD countries, 69% of students report that they like learning new things (Table I.B1.3.1). This shows students' self-reported intrinsic motivation to learn: engaging in learning for its inherent interest, enjoyment or satisfaction. Similarly, 73% of students report being curious about many different things, and 74% of students report that they like to know how things work, on average across OECD countries (Table I.B1.3.1).

Between 2022 and 2025, PISA data point to a drop in the share of students reporting several aspects of curiosity: in most systems, students appear to be less curious than they were in 2022. Across the five trends items considered here, four declined in a majority of participating countries and economies. The sharpest decline concerns the percentage of students who disagree or strongly disagree that "learning new things is boring" (60 systems); in no system did PISA 2025 show the opposite trend. As shown in Figure I.3.2, the share of students who disagreed or strongly disagreed with this statement declined by more than 10 percentage points in 30 countries and economies. Only in 11 countries and economies did the share remain unchanged between 2022 and 2025.

Figure I.3.2. Change in students who disagree that learning new things is boring between PISA 2022 and PISA 2025

Percentage of students who disagree or strongly disagree that learning new things is boring



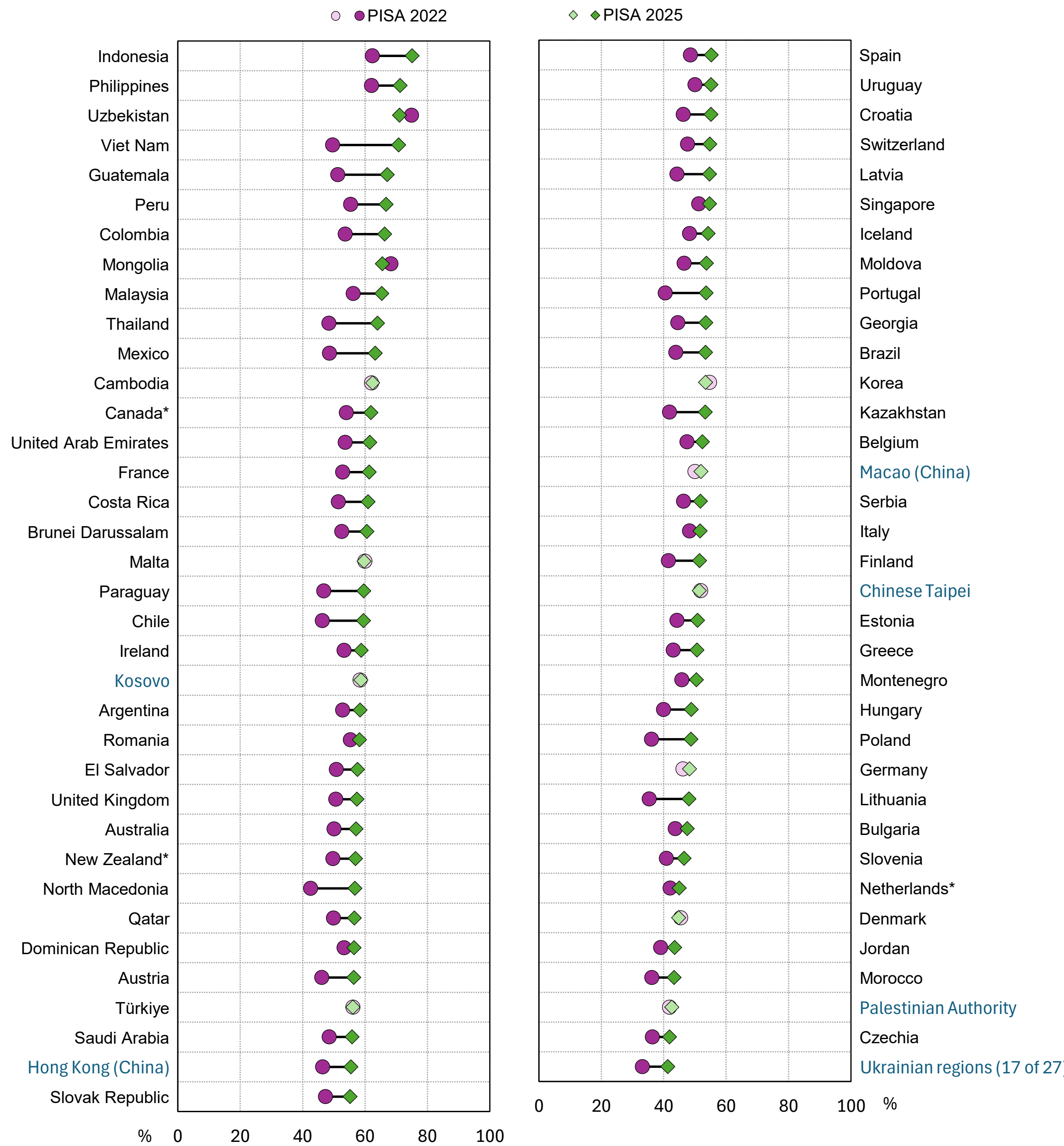
Notes: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the percentage of students who disagree that learning new things is boring in PISA 2025.
Source: OECD, PISA 2025 Database, Table I.B1.3.2. See https://stat.link/143ud5 for the underlying data.

The only item for which students' reports increased between 2022 and 2025 concerns feeling "more curious than most people they know", which rose in a majority of systems (59) (Figure I.3.3 and Table I.B1.3.2). This share increased by more than 10 percentage points in 16 countries and economies; in most of these systems, fewer than half of students had reported this in 2022. By contrast, it remained unchanged in 10 systems and declined only in Mongolia in Uzbekistan, by 3 and 4 percentage points, respectively.

This opposite trend is noteworthy because, although the item may capture an internalised belief, it is inherently relational. Students are not assessing themselves in isolation, but in comparison with the people around them. Their responses could therefore reflect both their self-concept and the social context in which it is formed, including the behaviours and attitudes they observe among their peers. In this sense, the measure can be interpreted not only as an indication of how students view themselves, but also as an indication of the environment in which they interpret their own curiosity.

Figure I.3.3. Change in students who feel more curious than most people they know between PISA 2022 and PISA 2025

Percentage of students who reportedly feel more curious than most people they know



Notes: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the percentage of students who feel more curious than most people they know in PISA 2025.
Source: OECD, PISA 2025 Database, Table I.B1.3.2. See https://stat.link/143ud5 for the underlying data.

Moreover, these contrasting trends – the increase in the share of students who report that they find learning new things to be boring, alongside the increase in the share who report feeling more curious than most people they know – may point to a widening gap between students' self-perceived orientation towards exploration and learning, and the extent to which their learning environments stimulate and sustain situational interest (Hidi and Renninger, 2006[11]). In other words, students may continue to see themselves as relatively curious while experiencing learning settings that do not sufficiently engage or challenge them, and therefore do not activate that curiosity in practice (Eccles et al., 1999[18]) .

When examining differences within countries and economies, the PISA 2025 results show that girls and socio-economically advantaged students report higher levels of curiosity than boys and disadvantaged students, on average. Differences in students' orientation towards learning may therefore be embedded in broader inequalities in their school experiences and attitudes.

This pattern is observed across most participating countries and economies. In 19 countries/economies, there are no differences between boys' and girls' reports, while only in B-S-J-Z (China), Hong Kong (China), Japan, Korea, Macao (China), Rwanda, Singapore and Chinese Taipei do boys report feeling more curiosity than girls (Table I.B1.3.3). Socio-economically advantaged students also report higher levels of curiosity than their disadvantaged peers, on average across OECD countries and participating countries/economies. In no country/economy is the inverse pattern observed. Only in Jordan, Kenya and Rwanda are there no differences by students' socio-economic profile (Table I.B1.3.3).

These results also suggest that average levels of motivation at the system level should be interpreted with caution, since they may mask substantial variation between groups of students. More broadly, they point to the importance of considering not only whether students report positive dispositions towards learning, but also how these dispositions are distributed across groups and how they relate to the contexts in which students learn.

Perseverance and sustained effort

Perseverance is another important dimension of PISA analysis of student attitudes and behaviours, concerning what happens once students encounter difficulty, frustration or uncertainty. In this chapter, perseverance is treated as a behavioural expression of the drive to learn and as a proxy for resilience, understood here not as an exceptional individual trait, but as the capacity to sustain effort and remain engaged when learning becomes more demanding. Perseverance adds a behavioural dimension to the analysis and suggests that engagement may depend not only on the interest generated by learning, but also on whether students are able to sustain effort once learning becomes challenging.

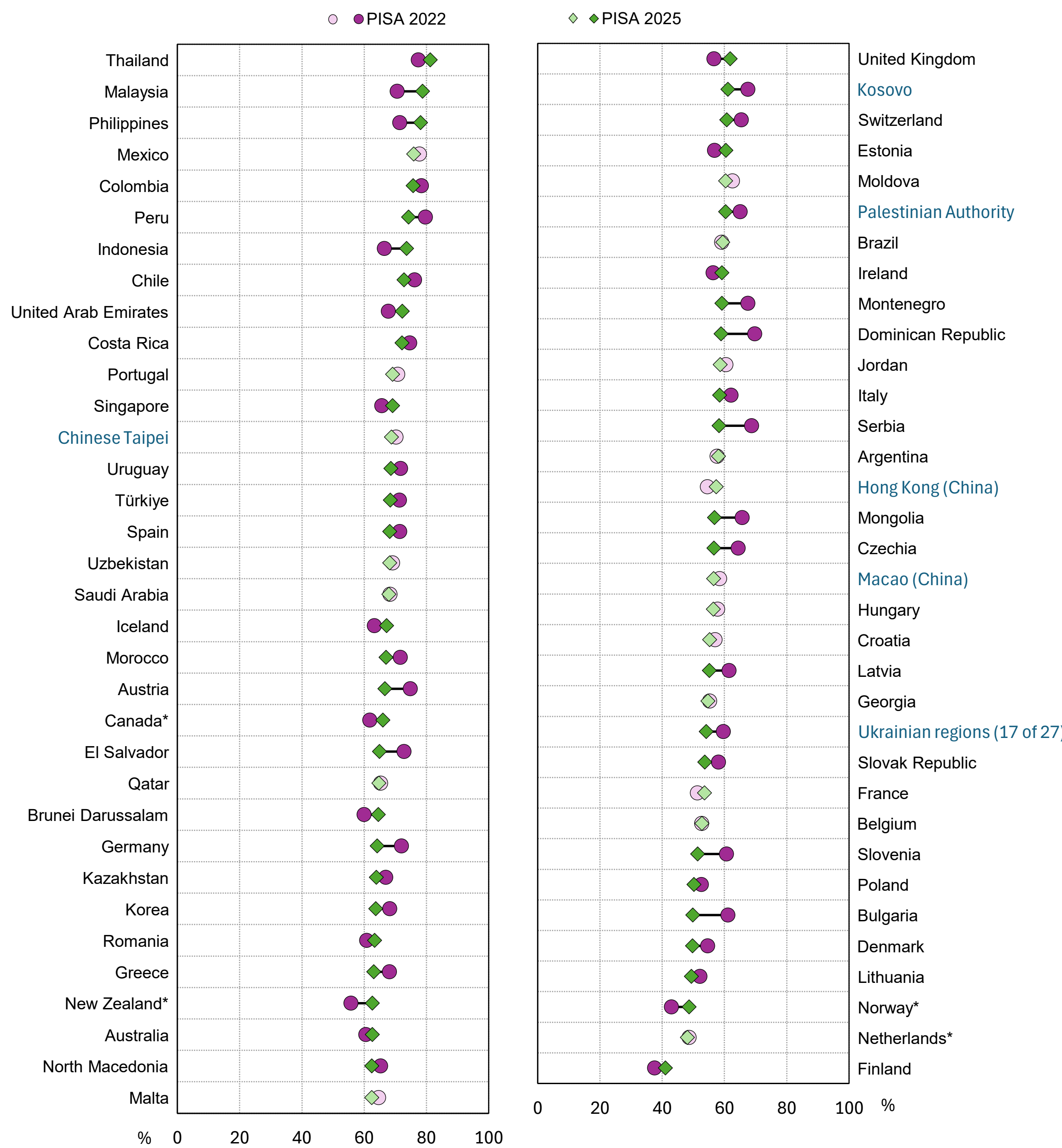
In PISA 2025, students were asked about their attitudes and follow-through in schoolwork, including whether they finish what they start, whether they keep working on a task until it is finished, whether they apply additional effort when work becomes challenging, whether they finish tasks they have started even when they become boring, and whether they give up easily when faced with long homework assignments.[2]

On average across OECD countries, under two-thirds of students (61%) reported that they finish what they start. However, cross-country variation is considerable (Table I.B1.3.9). In addition, 60% of students, on average across OECD countries, reported that they apply additional effort when work becomes challenging, and the share is lower for finishing tasks they have started even when they become boring, at 52%.

These attitudes appear to have weakened since the previous PISA cycle. In 28 systems, the share of students reporting that they keep working on a task until it is finished decreased, ranging from about a 3 percentage-point decline in Mexico to about 13 percentage points in Kosovo. Likewise, as shown in Figure I.3.4, in 32 systems, a smaller share of students reported that they apply additional effort when work becomes challenging than in 2022, with declines ranging from about 2 percentage points in Poland to about 11 percentage points in Bulgaria. In 40 systems, the share of students reporting that they finish what they start also fell, ranging from 2 percentage points in Costa Rica to 12 percentage points in the Dominican Republic (Table I.B1.3.10).

Figure I.3.4. Change in students who apply additional effort when work becomes challenging between PISA 2022 and PISA 2025

Percentage of students who reportedly apply additional effort when work becomes challenging



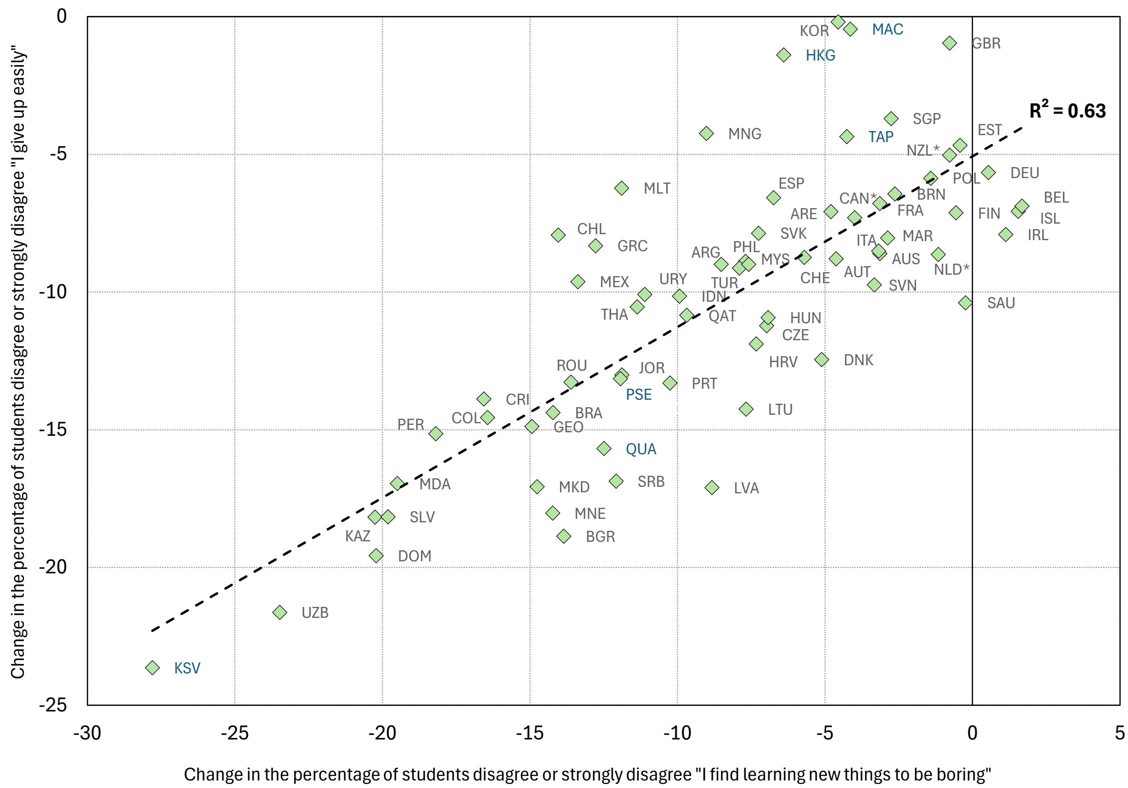
Notes: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the percentage of students who reported that they apply additional effort when work becomes challenging in PISA 2025.
Source: OECD, PISA 2025 Database, Table I.B1.3.10. See https://stat.link/143ud5 for the underlying data.

These trends are noteworthy given that, on average across OECD countries, about one-third of students reported that they quit doing homework if it is too long, and this share has increased in almost all systems since 2022: in 65 out of 69 with available data (Tables I.B1.3.9 and I.B1.3.10). Moreover, about half of students reported that they disagree or strongly disagree that they give up easily, and this share has fallen since 2022, decreasing in almost all systems (65).

Particular attention should be paid to the decline in students' self-reported perseverance, and to the rising share of students who report giving up on schoolwork, because these patterns bear directly on whether students' engagement with learning can be sustained when they encounter difficulty. Considered alongside the deterioration of curiosity presented earlier in this chapter, they suggest that several dimensions of engagement may be weakening in parallel. More specifically, the PISA results suggest that systems showing a deterioration in certain curiosity-related attitudes also tend to show a deterioration in perseverance-related attitudes over the same period (Figure I.3.5).

Figure I.3.5. Change in giving up easily and change in finding learning new things boring between 2022 and 2025

Change between PISA 2022 and PISA 2025 in the percentage of students who disagree or strongly disagree with the statements: "I give up easily" and "I find learning new things to be boring"



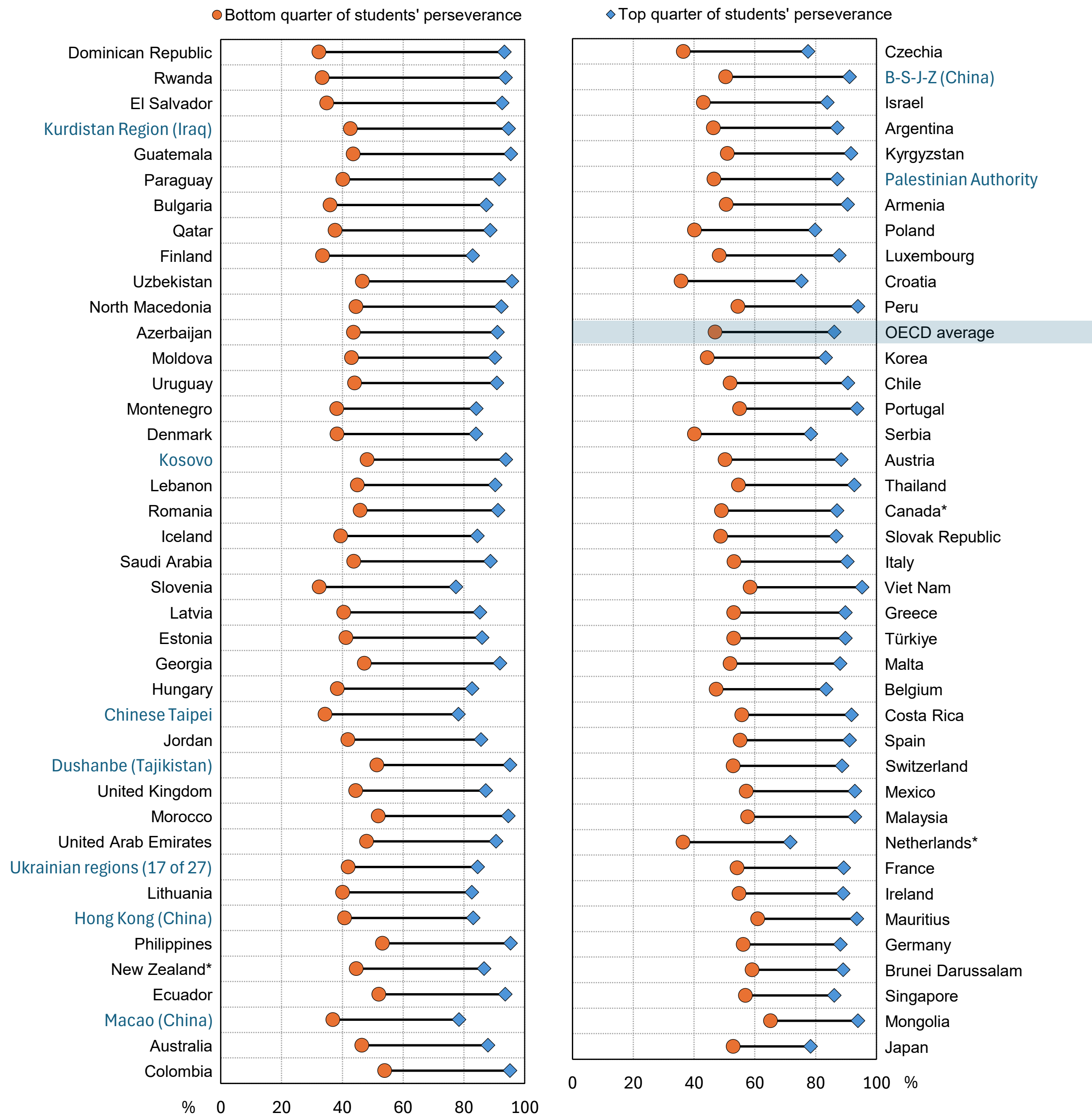
Note: Only countries and economies with available data are shown. Please refer to the Reader's Guide for countries' and economies' ISO codes.
Source: OECD, PISA 2025 Database, Tables I.B1.3.2 and I.B1.3.10. See https://stat.link/143ud5 for the underlying data.

While this does not imply any directional relationship between curiosity and perseverance, it does point to a broader weakening in both students' initial disposition to engage and their willingness to persist once learning becomes demanding. As a behavioural proxy for resilience, lower perseverance, particularly when it coincides with less positive curiosity-related attitudes, may suggest that students' orientation towards learning is not always matched by learning experiences that help sustain engagement through difficulty.

This close connection between students' drive to learn and their perseverance when learning becomes demanding can be seen across students' attitudes. For example, among students in the top quarter of the perseverance index, 86% reported that they like learning new things, on average across OECD countries (Figure I.3.6). By contrast, among students in the bottom quarter of the index, fewer than half did so (47%, on average). In no country/economy did fewer than 71% of the most reportedly perseverant students also report that they like learning new things, and in Colombia, Dushanbe (Tajikistan), Guatemala, the Philippines, Uzbekistan and Viet Nam virtually all students who reported high perseverance did so (Table I.B1.3.6).

Figure I.3.6. Students who like learning new things, by level of students' perseverance

Percentage of students who agree or strongly agree "I like learning new things", by quarter of the index of students' perseverance



Notes: Only countries and economies with available data are shown.
All differences between bottom and top quarters are statistically significant (see Annex A3).
Countries and economies are ranked in descending order of the difference in percentage of students who like learning new things between those who are the most and the least perseverant.
Source: OECD, PISA 2025 Database, Table I.B1.3.6. See https://stat.link/143ud5 for the underlying data.

Similar to the earlier analysis of curiosity, on average across OECD countries, and in a majority of participating countries and economies, girls report higher levels of perseverance than boys. In 21 participating countries and economies, however, there is no statistically significant difference, while in only 9 systems do boys report higher levels of perseverance than girls (Table I.B1.3.11). Similarly, in virtually all countries and economies, socio-economically advantaged students report higher levels of perseverance than their disadvantaged peers, as is also the case on average across OECD countries. The only exceptions are Croatia and Rwanda, where there is no difference by students' socio-economic profile (Table I.B1.3.11).

Overall, these results suggest that perseverance is an important behavioural dimension of students' drive to learn, but that it should be analysed in close relation to their curiosity. The average decline in perseverance, alongside the deterioration in some indicators of curiosity and the increase in students reporting that they give up more easily, points to a broader weakening in several dimensions of engagement across OECD countries.

At the same time, perseverance is not distributed evenly across groups of students. This suggests that students' capacity to remain engaged when schoolwork becomes difficult should not be understood simply as a matter of individual character. Rather, it forms part of a broader pattern in which students' motivation, behaviour and school experiences are differently aligned across students and education systems.

Growth mindset, beliefs about the nature of science and cognitive adaptability

This section examines three dimensions of students' cognitive engagement with learning: growth mindset, beliefs about the nature of science (or epistemic beliefs) and adaptability when facing unusual or changing circumstances. These are not fixed individual attributes but learning-related beliefs and practices that are shaped and expressed in schools and beyond. Their relevance lies in that they are related to the ways in which students interpret learning, respond to challenge and act within learning situations (Cleary and Zimmerman, 2012[8]; Wolters and Taylor, 2012[19]).

The first two dimensions concern learning-related beliefs that can orient students' engagement. A growth mindset refers to the belief that intellectual abilities can be developed through effort, engagement with challenge and response to feedback (Dweck, 2006[20]; Dweck, 2013[21]; Dweck and Leggett, 1988[22]), while beliefs about the nature of science concern students' views about the nature and justification of knowledge and, therefore, whether learning is approached as the passive reception of information or as the active construction of meaning (Kitchner, 1983[23]). The last dimension, adaptability, concerns the flexibility to respond to changing environments and new demands (Martin et al., 2012[24]).

Each of these cognitive dimensions is examined in relation to the motivational and behavioural dimensions discussed in the previous section, showing how these dimensions align – or fail to align – with the broader architecture of student engagement. As shown in Table I.3.1, across many systems, growth mindset, the beliefs about the nature of science and cognitive adaptability are positively related both to one another and to curiosity and perseverance. These relationships are not equally strong or consistent, however. The association between students' beliefs about the nature of science and cognitive adaptability is more uneven across systems, while those involving growth mindset and student drive appear to be more strongly shaped by students' academic performance.

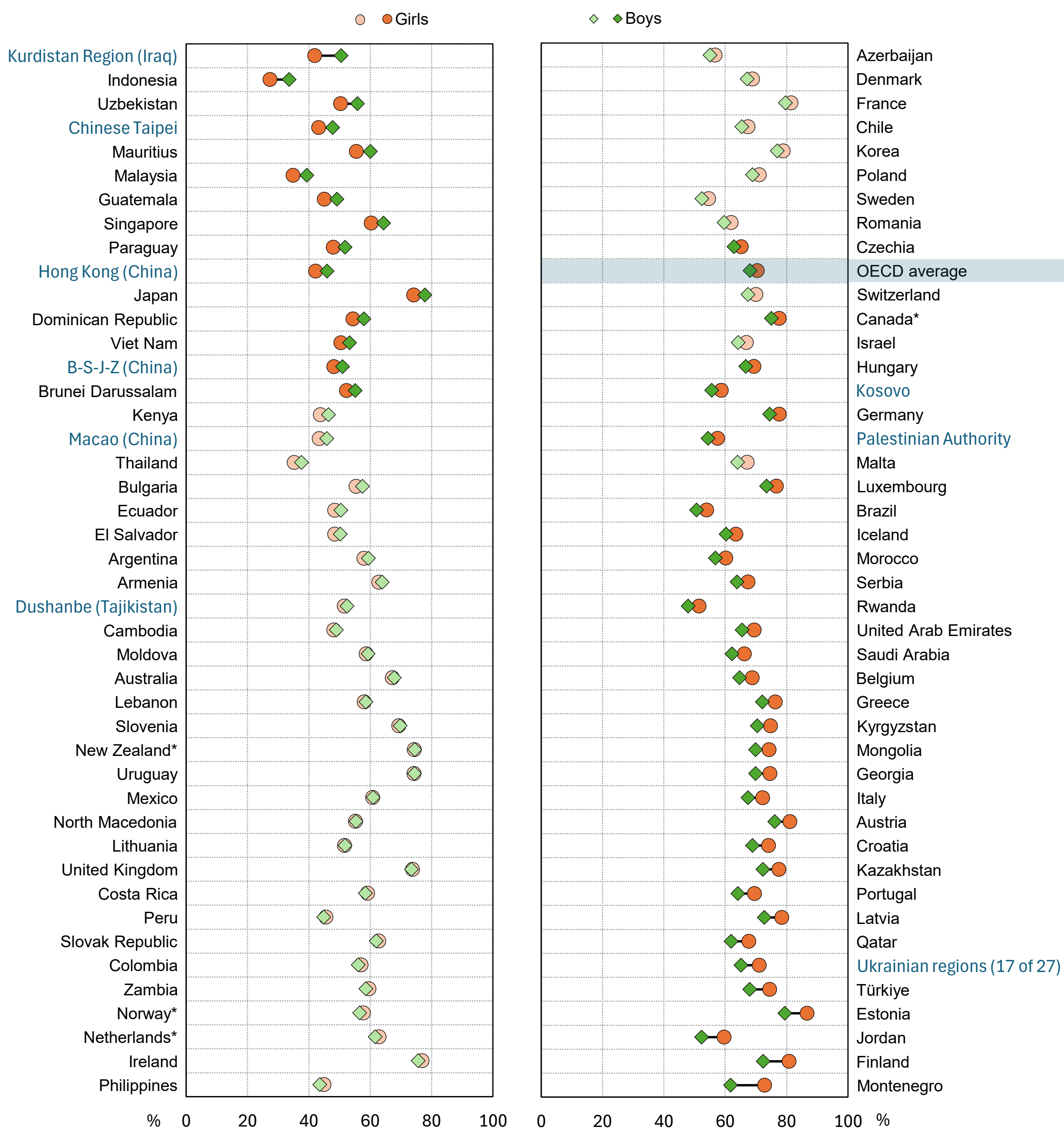
Growth mindset

A useful starting point for examining the cognitive dimension of engagement is students' growth mindset[3]. As first conceptualised by Carol Dweck (2006[20]), students differ in the extent to which they endorse the belief that intelligence can be developed. At one end of this continuum, students are more likely to see ability as malleable and improvable through effort, persistence, help seeking and support; at the other, they are more likely to view intelligence as largely innate and unchangeable. These beliefs are best understood as different ways of interpreting effort, challenge and feedback. In this chapter, growth mindset is treated as one element in the configuration through which student agency is oriented, insofar as it may shape whether students see learning difficulties as signals to withdraw or as situations in which effort, support and strategic action may make a difference.

PISA data show that, across OECD countries, about 69% of students reported a growth mindset. Only in 17 countries/economies, fewer than half of students did so. Over 80% of students reported a growth mindset in Estonia and France (Table I.B1.3.16).

Figure I.3.7. Students with a growth mindset, by gender

Percentage of students who disagree or strongly disagree with the statement "You have a certain amount of intelligence, and you really can't do much to change it", by gender

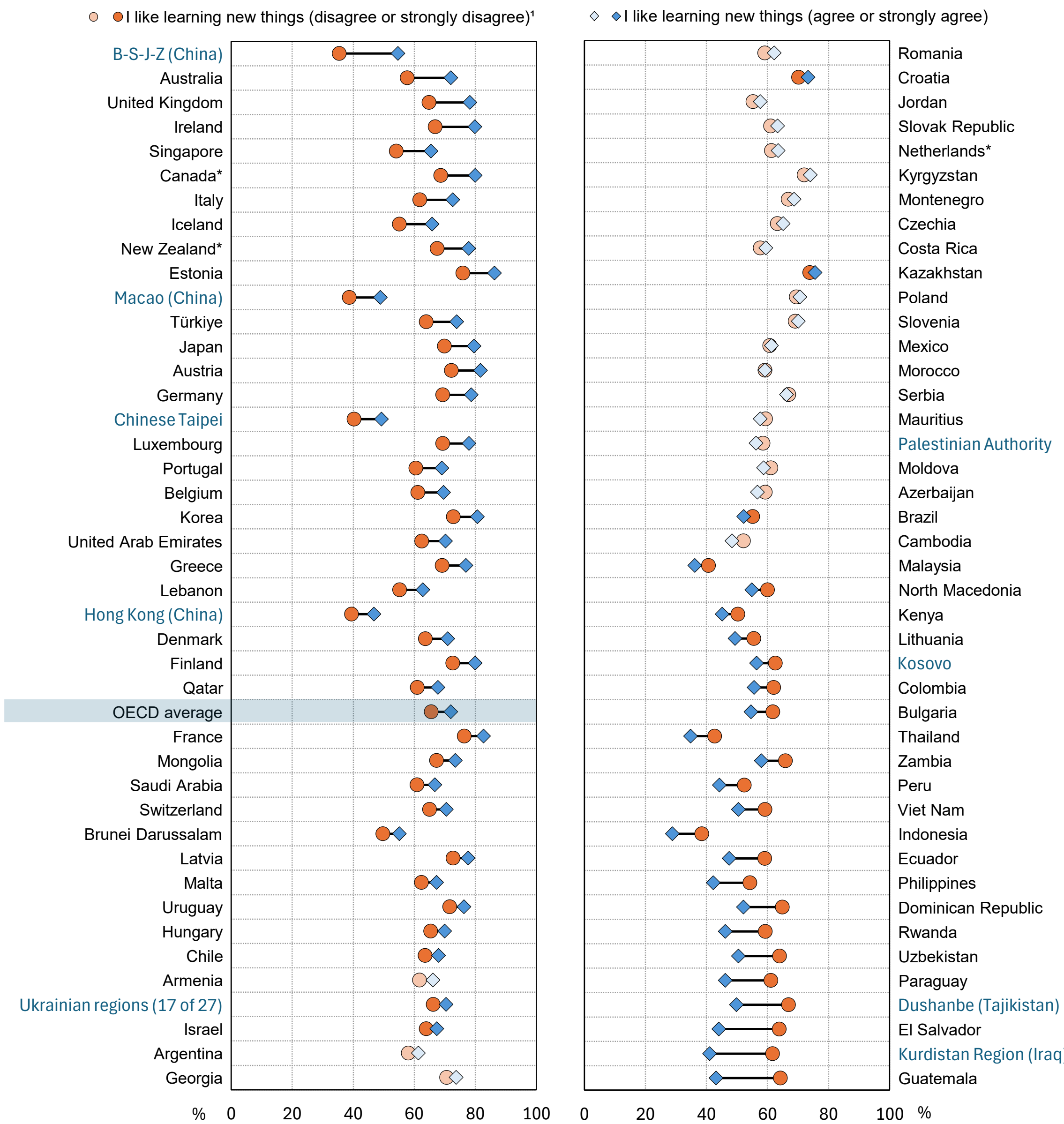


Notes: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the difference in percentage of students that disagree or strongly disagree with the statement: "You have a certain amount of intelligence, and you really can't do much to change it" between boys and girls.
Source: OECD, PISA 2025 Database, Table I.B1.3.17. See https://stat.link/143ud5 for the underlying data.

Growth mindset is not reported equally across groups of students: gender differences are generally small, whereas socio-economic differences are larger and more consistent across countries and economies. For example, on average across OECD countries, girls report a growth mindset slightly more often than boys (70% compared with 68%). Girls report a growth mindset more frequently than boys in 32 countries and economies; in 40 countries and economies there is no difference; and in 15 countries and economies boys report it more frequently than girls (Figure I.3.7 and Table I.B1.3.17).

Figure I.3.8. Students with a growth mindset and who like learning new things

Percentage of students who disagree or strongly disagree with the statement “You have a certain amount of intelligence, and you really can’t do much to change it”, when they like learning new things



1. This category includes students who neither agree nor disagree.
Notes: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the difference in percentage of students who disagree or strongly disagree with the statement "You have a certain amount of intelligence, and you really can’t do much to change it" between those who agree or disagree that they like learning new things.
Source: OECD, PISA 2025 Database, Table I.B1.3.20. See https://stat.link/143ud5 for the underlying data.

Socio-economic differences are observed in the majority of education systems. On average, 73% of socio-economically advantaged students report a growth mindset, compared with 65% of disadvantaged students. This pattern is observed in

71 countries and economies, while in only 16 are there no differences between the two groups (Table I.B1.3.17). These differences form part of the broader pattern of how students' orientations towards learning are distributed across education systems, and they provide an indication of how equitably such attitudes are fostered across groups of students.

Growth mindsets also relate to students' broader orientation towards learning. As shown in Figure I.3.8, PISA 2025 data suggest that, on average across OECD countries and in a large group of participating countries and economies, growth mindset is positively associated with curiosity to learn, after accounting for gender and students' and schools' socio-economic profile (Table I.B1.3.7). For example, the share of students reporting a growth mindset is higher among those who agree or strongly agree with the statement "I like learning new things" than among those who do not, on average across OECD countries. The average gap is over 6 percentage points and exceeds 19 percentage points in B-S-J-Z (China) (Table I.B1.3.20).

Once student performance in science is taken into account, however, the relationship between growth mindset and this form of curiosity becomes much less straightforward: it disappears or turns negative in 20 systems (Table I.B1.3.8). This indicates that the positive association observed on average is partly structured by the fact that both growth mindset and intrinsic motivation tend to be reported more often among higher-performing students (Tables I.B1.3.5 and I.B1.3.19).

This is aligned with previous PISA analyses that have shown that other students' attitudes (like curiosity or perseverance) do not relate to growth-mindset beliefs in the same way, but depend on their level of academic performance (OECD, 2025[25]). For lower-performing students in particular, the belief that improvement comes through effort and feedback may not always be matched by learning experiences that make such improvement visible or attainable. This may help explain why the relationship between growth mindset and curiosity to learn weakens once students are compared at similar levels of science performance.

The next question, therefore, is whether this alignment extends to perseverance, i.e. students' willingness to sustain effort when schoolwork becomes difficult and demanding. This is particularly relevant given that students with a growth mindset are more likely to view setbacks as part of the learning process and as opportunities to refine their approach and improve.

PISA data show that, on average across OECD countries and in the largest group of participating countries and economies, growth mindset is positively related to perseverance, even after accounting for students' and schools' socio-economic profile (Figure I.3.9 and Table I.B1.3.15). Students who are more likely to believe that abilities can be developed through effort and feedback also tend to report greater persistence when schoolwork becomes difficult. On average across OECD countries, the share of students with a growth mindset who reported they apply additional effort when work becomes challenging is higher (72%) than those who did not (67%) (Table I.B1.3.20). This average gap of 5 percentage points reaches about 14 percentage points in Macao (China), and 23 percentage points in B-S-J-Z (China).

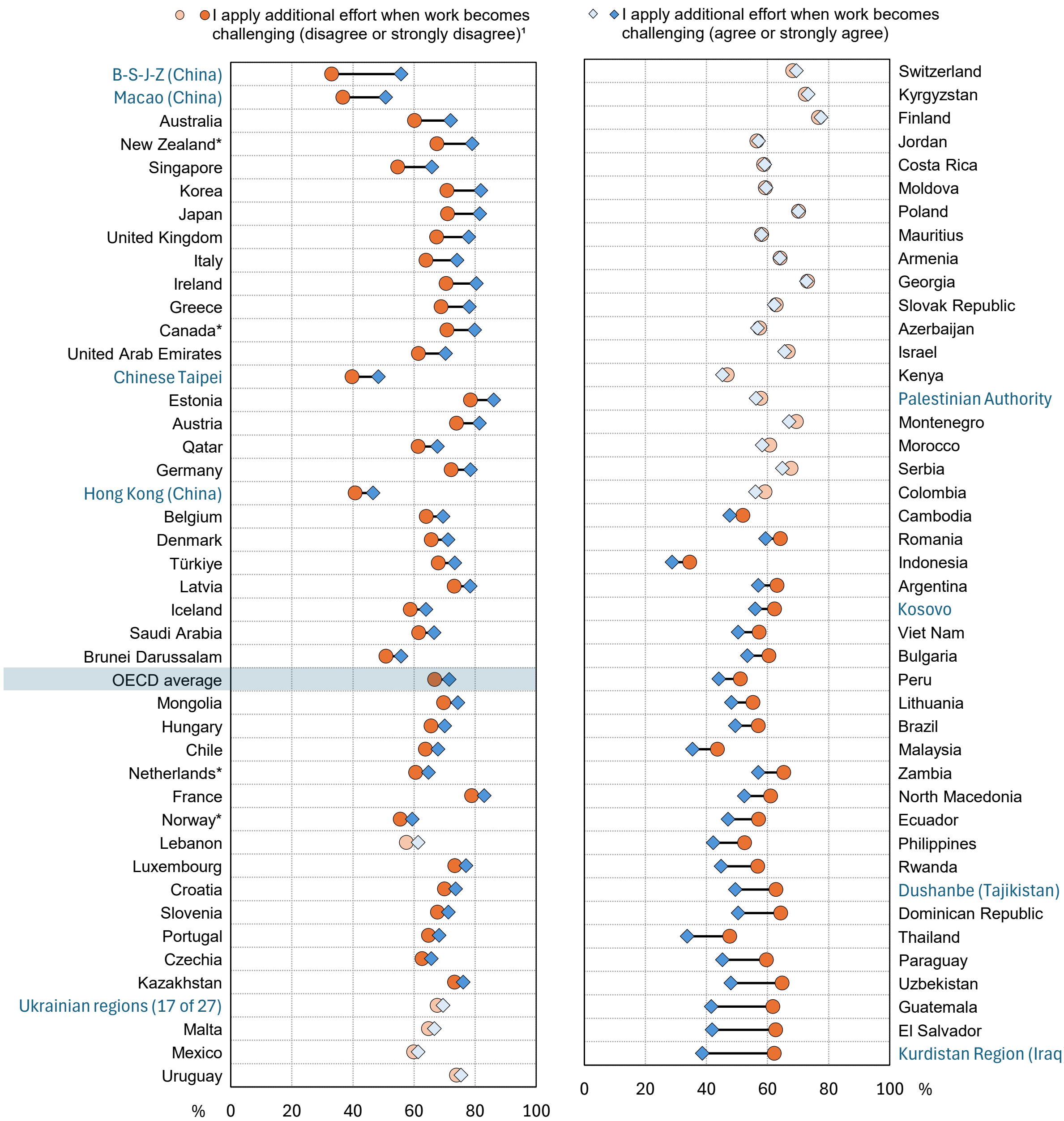
This positive relationship complements the earlier findings on students' curiosity to learn. This does not imply any directional relationship between these dimensions. It does, however, suggest that beliefs about improvement and sustained effort often align within students' broader engagement with learning.

This pattern is not observed in all systems, however. In some contexts, the relationship between growth mindset and perseverance is negative, and many of these are countries and economies at the lower end of average performance (Table I.B1.3.15).

Analyses that also account for science performance confirm that the relationship weakens or turns negative in some systems. Similar to curiosity, this suggests that growth mindset does not carry the same meaning at all levels of achievement. For perseverance, however, the interpretation may be somewhat different. As previous analysis with PISA data have suggested (OECD, 2025[25]), at different levels of achievement, persistence may reflect different things: for top-performing students, for example, a strategic and improvement-oriented response to challenge; for lower-performing students, perseverance may reflect the greater effort required simply to maintain similar performance, not necessarily to improve performance (OECD, 2025[25]).

Figure I.3.9 Students with a growth mindset and who apply additional effort when work becomes challenging

Percentage of students who disagree or strongly disagree with the statement "You have a certain amount of intelligence, and you really can't do much to change it", when they apply additional effort when work becomes challenging



1. This category includes students who neither agree nor disagree.
Notes: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the difference in percentage of students who disagree or strongly disagree with the statement "You have a certain amount of intelligence, and you really can't do much to change it" between those who agree or disagree that they apply additional effort when work becomes challenging.
Source: OECD, PISA 2025 Database, Table I.B1.3.20. See https://stat.link/143ud5 for the underlying data.

Together, these findings suggest that growth mindset is best understood as one element within a broader configuration of engagement rather than as a stand-alone belief. In many contexts, students who report a growth mindset also tend to report greater curiosity and greater perseverance. At the same time, these relationships are not uniform across and within systems and are less consistent once science performance is taken into account. For this reason, growth mindset should not be treated as a fixed label or as a sufficient marker of cognitive engagement on its own. Rather, it offers one window into how students understand learning, effort and the possibility of improvement within the contexts in which they learn (see Box I.3.1).

Box I.3.1. Growth mindset and teacher and family support

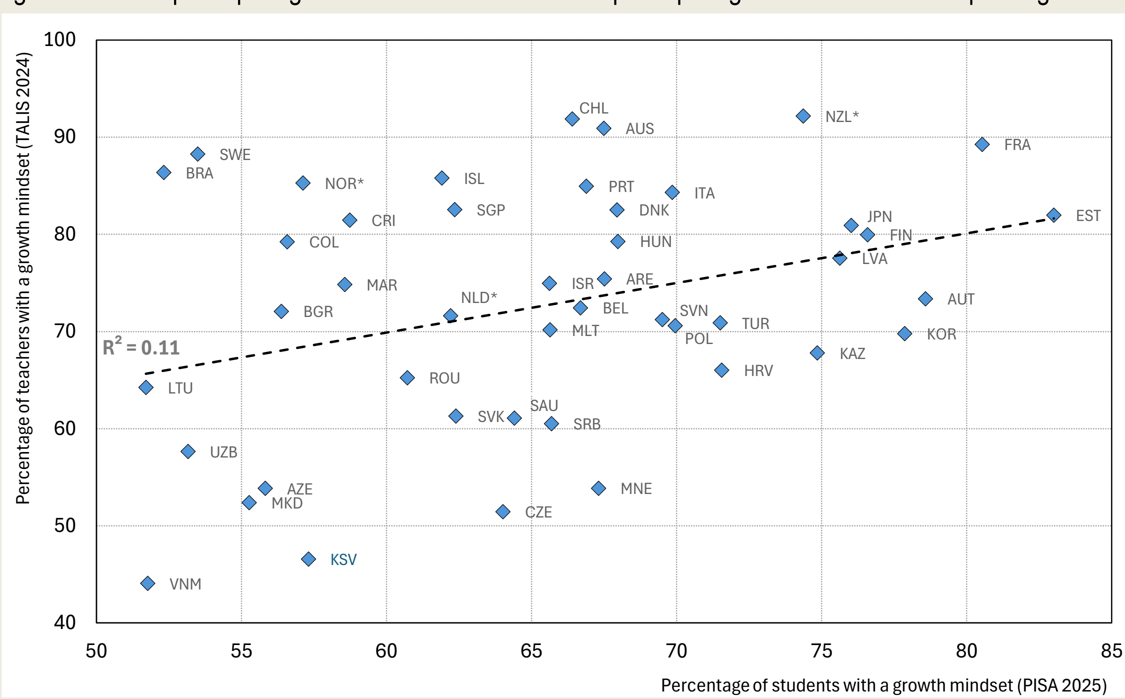
Students' growth mindset is shaped not only by their own personal beliefs about learning, but also by the environments in which they learn and develop. This box examines two key aspects – teachers and families – that may play critical roles in shaping the learning and development of students.

Teachers' beliefs and practices

Teachers' beliefs about the nature of intelligence are relevant to students' growth mindset. TALIS 2024 collected information about teachers' beliefs about growth mindset: 78% of teachers reported a growth mindset across the 27 OECD countries participating in the survey (OECD, 2025[26]). At the system level, these teacher responses about growth mindset show a positive association with students' responses in PISA 2025, for countries and economies with available data, albeit a modest one (r = 0.33) (Figure I.3.10).

Figure I.3.10. Teachers' and students' growth mindset

Percentage of teachers participating in TALIS 2024 and students participating in PISA 2025 who report a growth mindset[1]



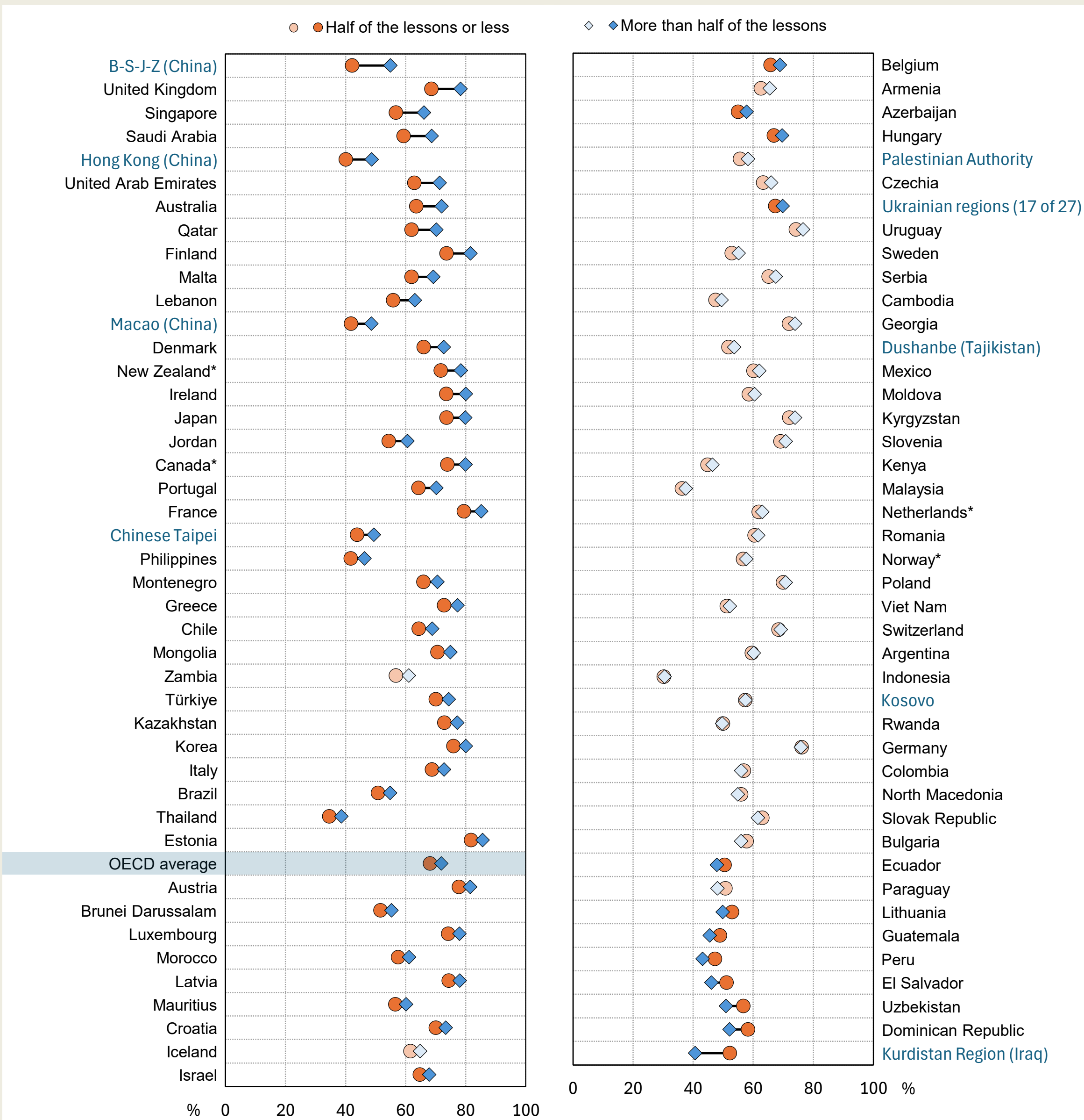
Notes: Only countries with available data in the two surveys are included. Please refer to the Reader's Guide for countries' and economies' ISO codes.
1. The phrasing of the questions on growth mindset in TALIS 2024 and PISA 2025 is not identical. It is therefore not possible to draw direct comparisons of absolute proportions between the two groups.
Source: OECD, PISA 2025 Database, Table I.B1.3.16 and TALIS 2024 Database, Table 2.37. See https://stat.link/143ud5 for the underlying data.

This provides a key starting point, but it is important to consider how these beliefs are reflected in classroom practices and how these practices create opportunities for students to experience effort, feedback and improvement in meaningful ways.

One such aspect is teacher support. In PISA 2025, students with a growth mindset reported receiving more frequent teacher support on average and in 40 countries and economies (after accounting for gender, student and school socio-economic profile) (Table I.B1.3.26). In Australia, B-S-J-Z (China), Ireland, Lebanon, Malta, New Zealand* and the United Kingdom students who reported that their teachers help them with their learning more also reported growth mindset more frequently than their counterparts (over 10 percentage points higher) (Table I.B1.3.21).

Figure I.3.11. Growth mindset and encouragement for students to persevere

Percentage of students who disagree or strongly disagree with the statement "You have a certain amount of intelligence, and you really can't do much to change it", when reporting that teachers ask them to keep trying even when they face difficulties



Notes: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the difference in percentage between students who disagree or strongly disagree that "You have a certain amount of intelligence, and you really can't do much to change it" and report that "Teachers ask them to keep trying even when they face difficulties" in more than half of the lessons and about half of the lessons or less.
Source: OECD, PISA 2025 Database, Table I.B1.3.22. See https://stat.link/143ud5 for the underlying data.

Teachers' encouragement for students to persevere is also relevant to students' growth mindset. Students who reported that their teachers more frequently asked them to keep trying even when they face difficulties tend to report a growth mindset more, on average and in more than half countries and economies. In B-S-J-Z (China), 55% of students who perceive more encouragement from their teachers to persevere reported a growth mindset, compared to around 40% of their counterparts (Table I.B1.3.22).

Furthermore, among students who receive more frequent encouragement to persevere from their teachers, a growth mindset is associated with greater increase in mean scores in science performance, compared to those who receive less frequent encouragement. Although this varies across countries and economies. For example, in the Philippines, the difference in science performance of students who reported a growth mindset is 41 score points higher amongst those who reported more frequent encouragement and 17 score points amongst their counterparts, after accounting for gender, student and school socio-economic profile (Table I.B1.3.27).

These findings suggest that while teachers' and students' mindsets can be intertwined, it is plausible that when teachers provide more encouragement for sustained effort and perseverance in the face of challenges, growth mindset more effectively translates into higher performance.

Interestingly, these findings seem to vary by performance level. In terms of teachers' beliefs and practices, the relationships are often non-significant amongst low performers. On the other hand, among mid and top performers, students with a growth mindset tend to report greater teacher support, as well as more frequent encouragement from their teachers to persevere (Tables I.B1.3.28 and I.B1.3.29).

This is aligned with previous findings using PISA data (OECD, 2025[25]). It is plausible that these variations could be reflecting compensatory dynamics, i.e. teachers provide stronger and adapted support to weaker students, but these students, who may already struggle with confidence, do not necessarily develop stronger growth mindsets at the same pace as higher-performing students.

Parental support and feedback

While teachers play a key role in students' learning environments, it is also important to consider the broader contexts in which students develop, beyond the classroom, and particularly at home.

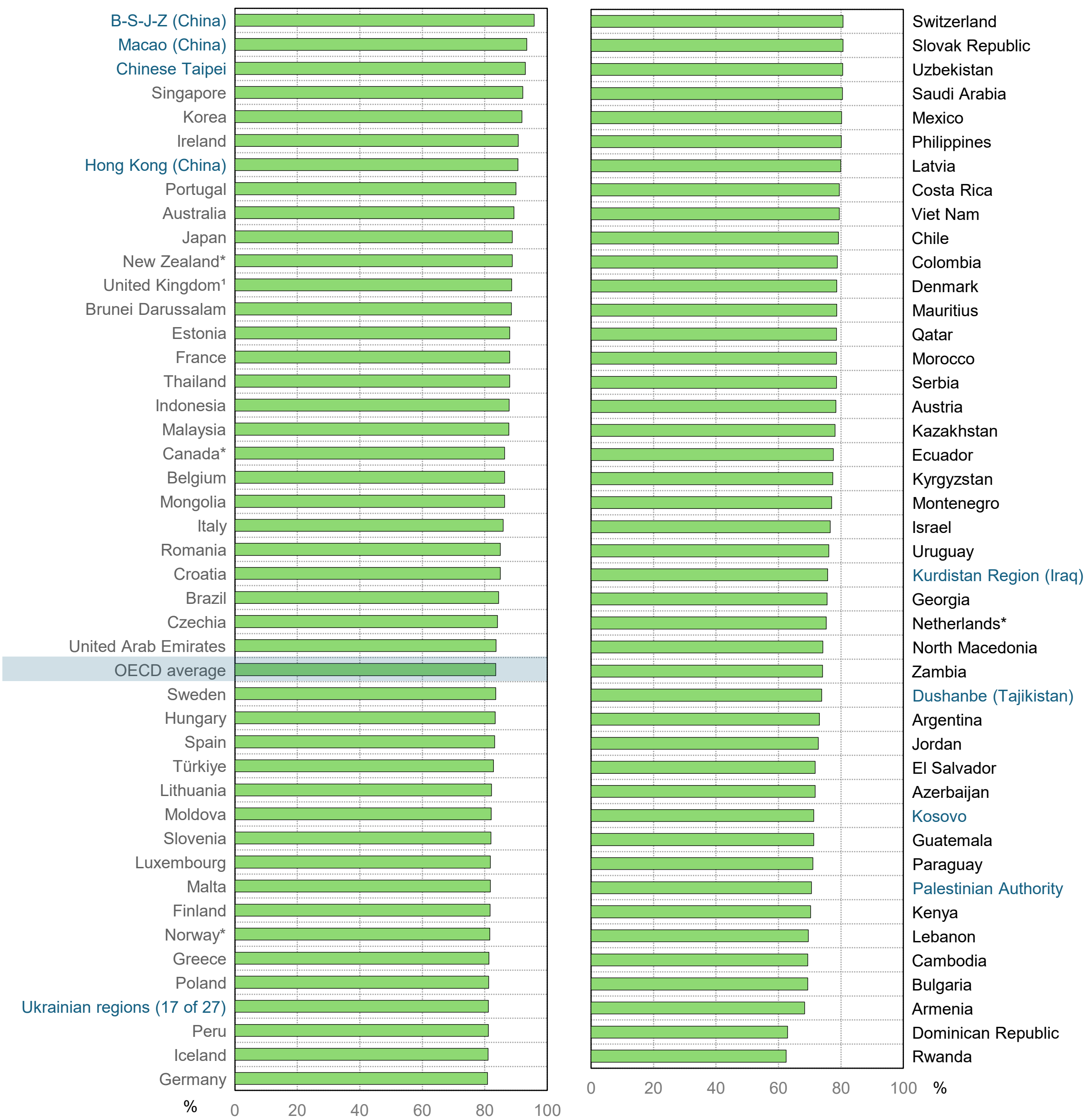
Students with a growth mindset tend to report receiving more frequent support from their parents, on average across OECD countries and in the majority of countries and economies (Table I.B1.3.26). However, this varies by the type of parental attitude. For example, students who feel that their parents take an interest in their learning and ask about what they did in school more frequently, tend to report having a growth mindset more often than students who experience these parental attitudes less frequently, on average across OECD countries (6% and 7% respectively). In contrast, when parents' attitudes are future-oriented (e.g. discussions about students' future education), the difference between students who report receiving more of such support and their counterparts is lower on average (2%) and observed in across half of education systems (Table I.B1.3.23)[4].

Student beliefs about the nature of science

Another important dimension explored in PISA 2025 concerns students' beliefs about the nature of science[5]: what they think about scientific knowledge itself, and about what it means to learn scientifically, to understand, validate and justify what is known. These beliefs matter because they shape how students position themselves epistemically, whether knowledge is approached as something to be received, or as something to be examined, tested and revised. Across OECD countries, a large majority of students endorse key beliefs about the nature of science, particularly those related to evidence, verification and the revisability of knowledge. These beliefs also stand in opposition to the view that common sense should be relied on more than scientific studies. This becomes crucial in a world where much information circulates outside of traditional information sources, through social media and other platforms (Egan et al., 2026[27]).

Figure I.3.12. Students checking reliability of sources

Percentage of students who agree or strongly agree that information from one source should be checked from a range of other reliable sources before it is accepted



Note: Only countries and economies with available data are shown.
Countries and economies are ranked in descending order of the percentage of students who agree or strongly agree with the statement "Information from one source should be checked from a range of other reliable sources before it is accepted".
Source: OECD, PISA 2025 Database, Table I.B1.3.30. See https://stat.link/143ud5 for the underlying data.

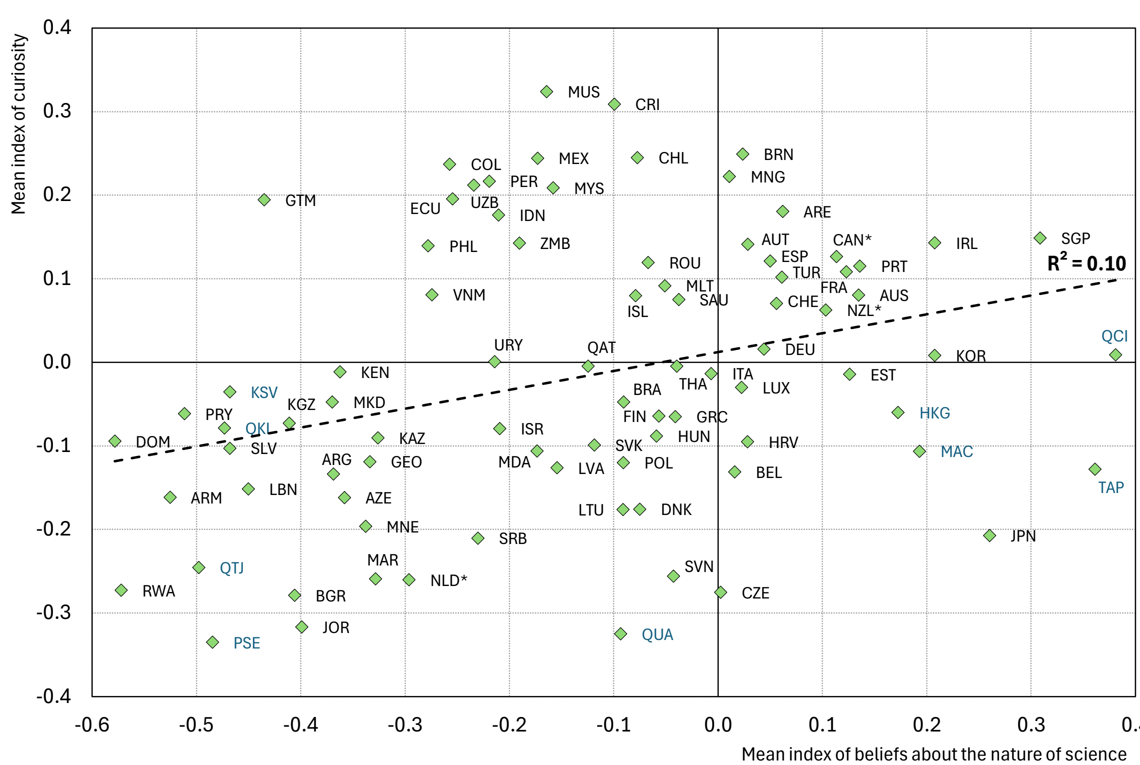
PISA 2025 data show that, on average across OECD countries and in many participating countries and economies, over 81% of students endorse key beliefs about the nature of science. These include the view that “one important part of broad science is doing experiments to come up with ideas about how things work”, that “good answers are based on evidence from many different experiments”, that “information from one source should be checked from a range of other reliable sources before it is accepted", that "there are some questions that scientists cannot answer", and that "new discoveries can change what scientists think is true". In no system do fewer than 60% of students report agreeing with these beliefs, with two notable exceptions: in Kenya and Rwanda, about half of students disagree that "there are some questions that scientists cannot answer". If such a large number of students believe that there are no questions that science cannot answer, it may point to a more limited understanding of scientific knowledge as grounded in hypothesis, evidence and verification, and as open to revision in light of new findings (Table I.B1.3.30).

A closely related question concerns students' belief that "it is important to rely more on common sense and less on scientific studies" (43% of students agree or strongly agree with this statement, on average across OECD countries) (Table I.B1.3.30). This position contrasts with the view that "information from one source should be checked from a range of other reliable sources before it is accepted", thus affirmative responses to these two items are negatively correlated (system-level correlation r = -0.42). More broadly, students who value common sense more than scientific studies are generally less likely to endorse the aforementioned wider set of beliefs about the nature of science. Even so, in a number of systems, a sizeable share of students both agree that "information from one source should be checked from a range of other reliable sources before it is accepted" and agree that "it is important to rely more on common sense and less on scientific studies". As shown in Box I.3.2., in many of these systems, students who report this combination of beliefs are also likely to show positive learning outcomes.

Endorsing scientific epistemic values is positively aligned with students' curiosity to learn at the system level (Figure I.3.13). This positive relationship is also observed within countries and economies (Table I.B1.3.7). On average across OECD countries, the share of students reporting they like to learn new things is 26 percentage points higher among those whose responses endorse scientific beliefs than among those who do not (Table I.B1.3.6).

Figure I.3.13. Students' curiosity and beliefs about the nature of science

Mean indices of curiosity and beliefs about the nature of science



Note: Only countries and economies with available data are shown. Please refer to the Reader's Guide for countries' and economies' ISO codes.
Source: OECD, PISA 2025 Database, Tables I.B1.3.1 and I.B1.3.30. See https://stat.link/143ud5 for the underlying data.

Student responses that indicate perseverance also tend to align with support of scientific beliefs. Across all participating countries and economies, students' beliefs about the nature of science are positively associated with perseverance, after accounting for student and school socio-economic profile (Table I.B1.3.15). This indicates a link between students' understanding of knowledge and their willingness to sustain effort when learning becomes difficult.

These relationships suggest that the cognitive and motivational dimensions of engagement are closely connected: students who value learning as an inherently worthwhile activity also tend to hold more developed views about the nature of scientific knowledge. This alignment matters because it links students' drive to inquire with an understanding of knowledge as something to be examined, justified and open to revision, rather than simply received as fixed fact. Furthermore, students who are more likely to view knowledge as evidence-based, examinable and open to revision also tend to be those who approach learning with greater interest and sustained effort. Therefore, if knowledge is approached this way, rather than as fixed and given, then it is reasonable to expect that this orientation may also align with beliefs about one's own ability to develop and progress through effort and learning. This provides a natural transition to students' growth mindset.

PISA data show that in 60 countries/economies, students who hold stronger beliefs about the nature of science are more likely to report a growth mindset. Only in 9 is the opposite pattern observed (Table I.B1.3.25). This reinforces this broader alignment across cognitive dimensions of engagement. Beliefs about one's own capacity to improve and beliefs about how knowledge is formed often move in the same direction and are likely complementary: one concerns how students think about learning and ability, while the other concerns how they think about knowledge itself. Their positive relationship therefore points to a broader orientation in which knowledge (and therefore learning) is approached as something active, revisable and open to development, rather than as the passive reception of fixed truths.

Overall, these results suggest that scientific beliefs appear to sit at the intersection of the cognitive, motivational and behavioural dimensions of engagement: they are linked not only to how students think about scientific knowledge, but also to how they approach learning more broadly. Such beliefs about the nature of science could therefore provide an important bridge between students' internal beliefs and the ways in which these beliefs may be reflected in their motivation and learning behaviour.

Box I.3.2. Views on fact-checking information versus relying on common sense

Students' beliefs about the nature of science are strongly associated with science performance across education systems. Of the various dimensions covered by the PISA index, the belief that information should be fact-checked across multiple reliable sources is one of the two dimensions most strongly associated with science performance (Table I.B1.3.33).

However, being cautious about information sources can stem from different reasons. Some students may place greater trust in scientific studies as a basis for drawing conclusions. Others may rely more readily on explanations that feel familiar, practical or intuitively plausible. To examine this, a profile-based approach was constructed combining responses to questions about source checking and relying on common sense more than on scientific studies, from the PISA 2025 student questionnaire (see Table I.3.2).

PISA data suggest that many students endorse source checking, but do not consistently prioritise scientific studies over intuitive or familiar explanations when making sense of information.

Across OECD countries, most students fall within two groups: those with a strong scientific profile (46%) and those with a non-restrictive profile (37%) (Table I.3.2 and country-level results in online Figure I.3.o1). While both endorse source checking to validate information, students with a non-restrictive profile report relying more on common sense over scientific studies.

Table I.3.2. Description of the scientific profiles

Type of epistemic profile	Response pattern to the following statements:		Possible implications of the response pattern for information evaluation	Average share of students at the OECD level
	Information from one source should be checked from a range of other reliable sources before it is accepted	We should rely more on common sense and less on scientific studies		
Strong scientific	Agree and strongly agree	Disagree and strongly disagree	Evidence from reliable sources, in particular scientific studies, is likely to be prioritised when evaluating information.	46.4%
Non-restrictive	Agree and strongly agree	Agree and strongly agree	It is unclear how source reliability is established, how they are prioritised, and how conflicts between scientific evidence and other diverging sources would be resolved.	37.5%
Non-scientific	Disagree and strongly disagree	Agree and strongly agree	Evidence from reliable sources, in particular scientific studies, is likely to be overlooked when evaluating information.	10.9%

Note: A fourth response combination to these two questions not shown here is included in the source table.
Source: OECD, PISA 2025 Database, Table I.B1.3.36.

Across education systems, students with a strong scientific profile not only hold stronger beliefs about the nature of science but also perform better in science (mean score 532) than students with a non-restrictive profile (mean score 466), on average across OECD countries (Table I.B1.3.38). However, in a number of high-performing systems there are comparatively large shares of students with non-restrictive profiles (Austria, Czechia, Estonia, Finland, Hong Kong (China), Japan, Lithuania, Poland and Switzerland, with shares between 39-47%), suggesting that these students are not necessarily low-performing in absolute terms (Figure I.3.14, Table I.B1.3.36).

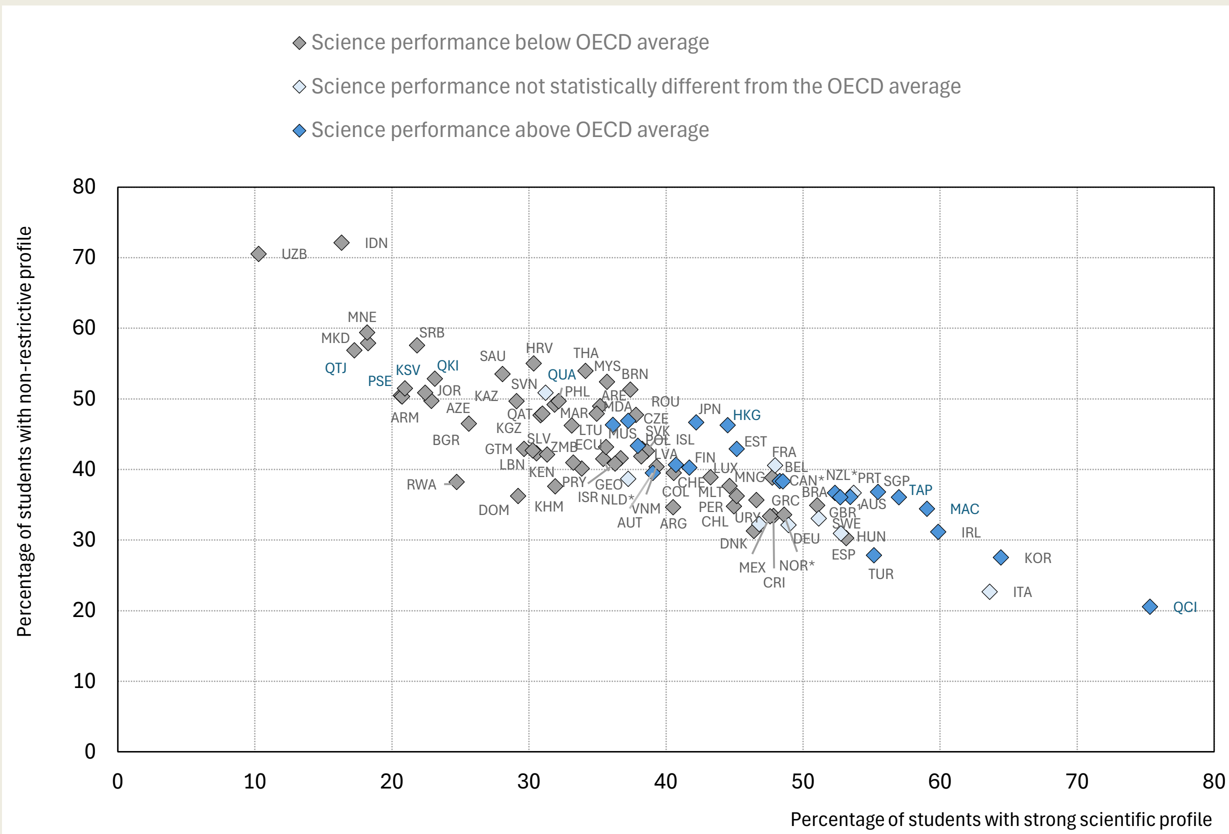
This distinction therefore does not simply reflect differences in academic ability. Although students with a strong scientific profile perform better on average, those with a non-restrictive profile still achieve relatively high levels of performance across education systems. Rather, the difference reflects how students approach evidence, balance intuition and evidence, and decide which sources of knowledge to prioritise when making sense of the information they receive.

Students with non-scientific profiles show the lowest science performance (mean score 434) compared to students with strong scientific and non-restrictive profiles, on average, across OECD countries and across participating countries/economies.

This pattern is not limited to science performance. Similar findings across profiles are also observed in reading: on average across OECD countries, students with a strong scientific profile perform better in reading (mean score 512) than students with a non-restrictive profile (mean score 446), and those with a non-scientific profile (mean score 411) (Table I.B1.3.39). This suggests that these profiles capture more general ways in which students approach information, evidence and reasoning, rather than reflecting science-specific knowledge alone.

Figure I.3.14. Percentage of students with strong scientific and non-restrictive profiles, and average science performance

Percentage of students who agree and strongly agree with the statement "Information from one source should be checked from a range of other sources before it is accepted" and who agree and strongly agree with the statement "We should rely more on common sense and less on scientific studies"



Note: Only countries and economies with available data are shown. Please refer to the Reader's Guide for countries' and economies' ISO codes.
Source: OECD, PISA 2025 Database, Tables I.B1.3.2a.1 and I.B1.3.36 .See https://stat.link/143ud5 for the underlying data.

Students live in environments in which information from unreliable sources is abundant and often difficult to distinguish from more trustworthy evidence. In this context, it is not enough for students simply to endorse fact checking in the abstract. They also need to learn when and how to weigh evidence, question intuitive claims and judge the reliability of different types of information.

From a policy perspective, this points to the importance of helping students become more autonomous and discerning learners. The PISA 2025 data suggest that supporting students' epistemic development requires more than teaching them to endorse scientific principles. It also requires creating learning opportunities in which students actively practise questioning intuitive explanations, comparing sources and evaluating competing claims. Schools can play a central role in fostering these capacities, ensuring that students not only understand how knowledge is constructed, but also use these principles consistently when reasoning about information in everyday contexts.

Confidence in cognitive adaptability: Adapting to the unknown

Cognitive adaptability reflects students' capacity to adjust their thinking and behaviour when faced with unfamiliar situations, uncertainty or complexity. In learning contexts, this ability to respond to novelty and revise one's approach is increasingly recognised as a core competence for effective learning in changing environments (Hilton and Pellegrino, 2012[28]). From this perspective, adaptability is a way of describing students' confidence to manage learning when routine strategies are no longer enough. It is therefore a relevant form of resilience, because it shows whether students can remain engaged by adjusting their thinking and actions in the face of complexity or change.

PISA 2025 data show that cognitive adaptability is moderately widespread across OECD countries. At the same time, these attitudes vary considerably across countries and economies, indicating that students' confidence in adapting to challenge and change is far from uniform. Developing cognitive adaptability is of crucial importance for students' success in life; they will need this ability throughout their lifetimes to adjust and adapt their thinking and actions in order to meet rapidly changing societal demands.

Across OECD countries, about half of students believe that they can adapt to situations that take them out of their comfort zones. For example, about half of students (50%) reported that the statement "I can handle unusual situations" is "mostly like me" or "very much like me", on average (Table I.B1.3.40). The share is 54% when looking to the statement "I can adapt to different situations even when under stress or pressure", and about 55% on "when encountering difficult situations with other people, I can find a way to resolve the situation". The only one of the cognitive adaptability statements that slightly less than half of students feel describes them is: "I can adapt easily to a new culture" (48%, on average) (Table I.B1.3.40).

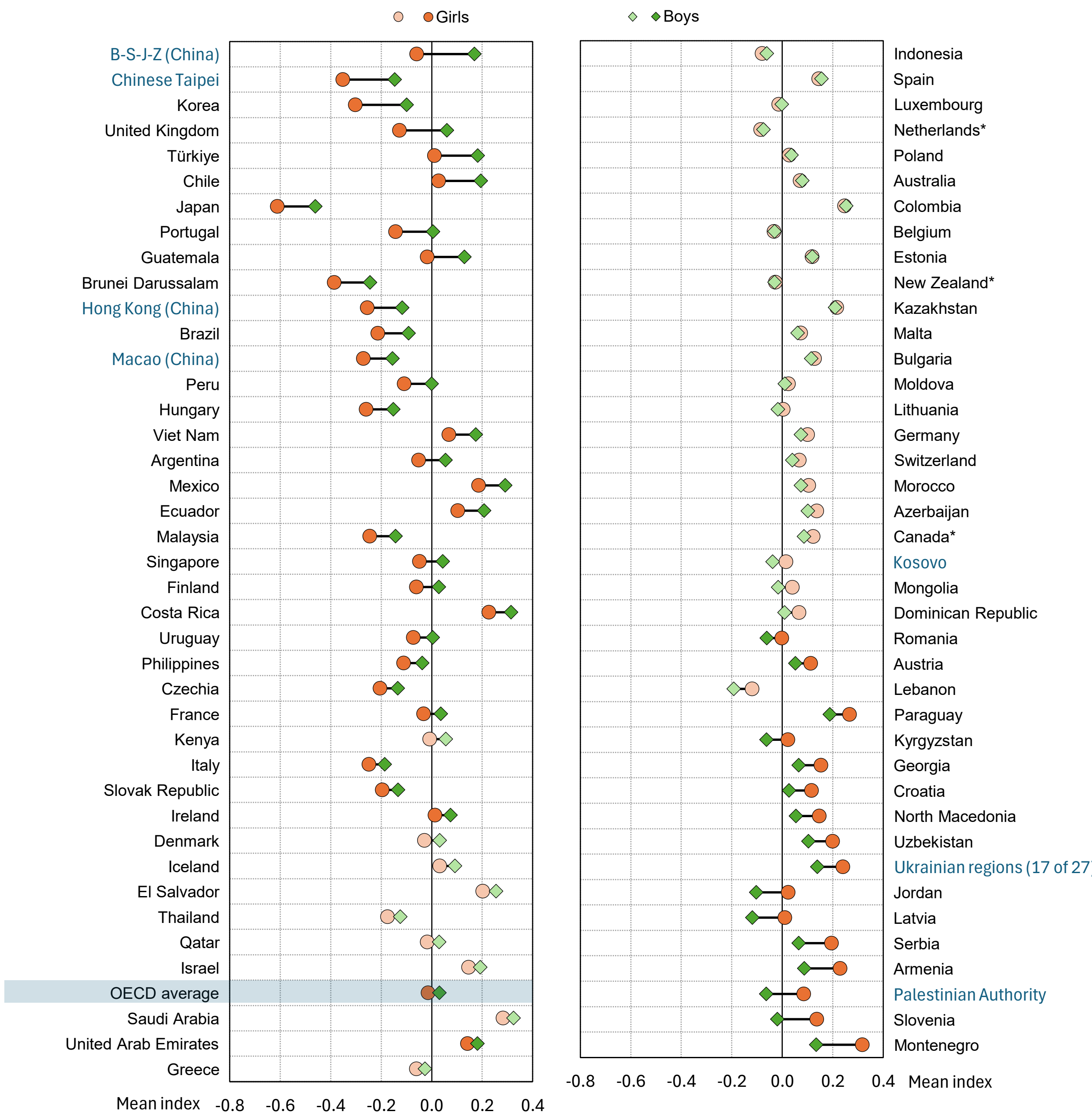
There is, however, important variation across countries/economies, as shown in Figure I.3.15 (online).[6]

Moreover, as shown in Figure I.3.15, boys tend to report higher cognitive adaptability than girls, on average across OECD countries and in 31 countries and economies. However, in 33 systems there are no differences between boys and girls, and in another 16, it is girls who reported higher cognitive adaptability than boys. Moreover, what is clearer is the divide between socio-economically advantaged and disadvantaged students. The former reported higher cognitive adaptability than the latter, on average and in almost all countries and economies (Table I.B1.3.42).

Cognitive adaptability can be read as the point at which students' motivation to learn is tested under changing or uncertain conditions. It is positively related to motivational aspects like curiosity (Table I.B1.3.7). For example, students who are intrinsically motivated to learn (i.e. agree that they like to learn new things), are more likely to report so when they have cognitive adaptability (Table I.B1.3.8). About 78% of students with high cognitive adaptability (in the top quarter of the index) reported this sort of intrinsic motivation, while about 60% of those with low cognitive adaptability did (in the bottom quarter) (Table I.B1.3.6). Students who are more interested in learning and open to new ideas also tend to be better able to adjust when they face unfamiliar situations or unexpected challenges. In this sense, adaptability shows how students' internal drive to learn may remain active even when learning requires flexibility rather than just routine effort.

Figure I.3.15. Students' cognitive adaptability, by gender

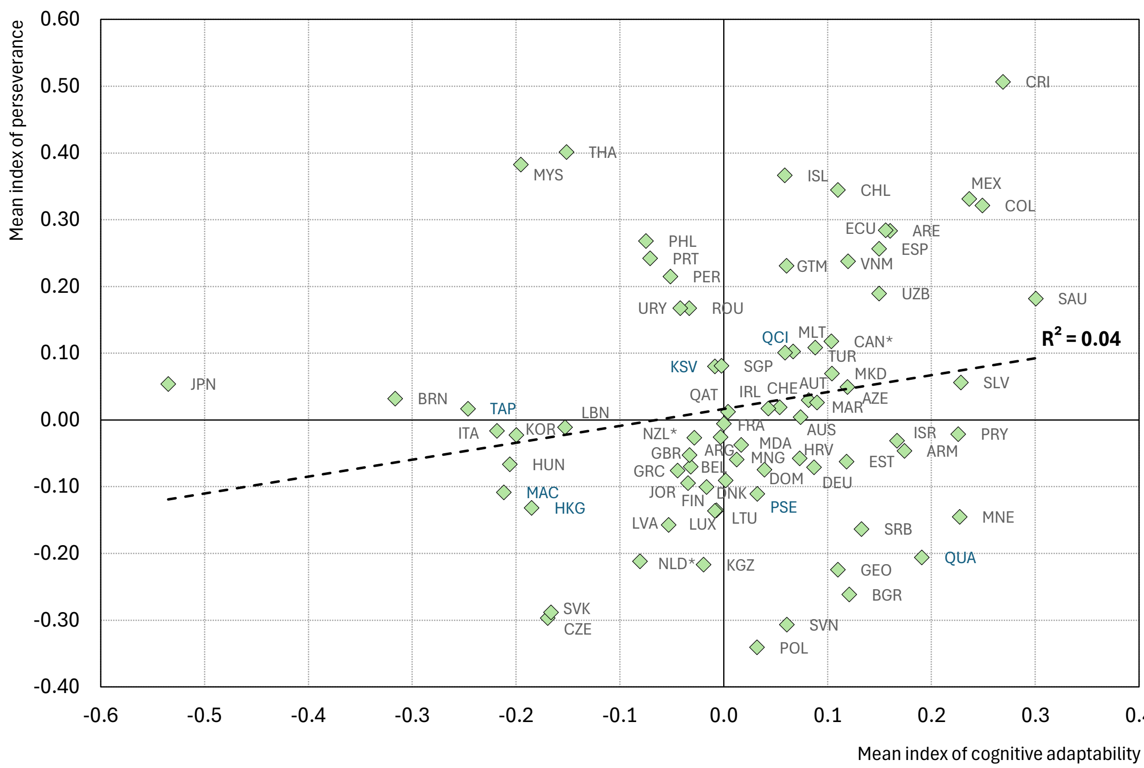
Mean index of cognitive adaptability, by gender



Note: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the difference in mean index of adaptability between boys and girls. .
Source: OECD, PISA 2025 Database, Table I.B1.3.42. See https://stat.link/143ud5 for the underlying data.

Figure I.3.16. Students' perseverance and cognitive adaptability

Mean indices of perseverance and cognitive adaptability



Note: Only countries and economies with available data are shown. Please refer to the Reader's Guide for countries' and economies' ISO codes.
Source: OECD, PISA 2025 Database, Tables I.B1.3.9 and I.B1.3.40. See https://stat.link/143ud5 for the underlying data.

Cognitive adaptability is associated with perseverance. As shown in Figure I.3.16, systems with more students reporting cognitive adaptability tend to be those with students reporting higher perseverance (Table I.B1.3.15). The same positive relationship is observed within countries and economies. For example, on average across OECD countries, 69% of students who reported the most cognitive adaptability also reported they apply additional effort when work becomes challenging, while only about half did so among students with low cognitive adaptability (Table I.B1.3.14).

If perseverance reflects sustained effort in the face of challenge, then growth mindset and epistemic beliefs help capture the cognitive orientation within which such adjustment becomes meaningful: learning is approached as something open to development, and knowledge as something that must be examined, tested and revised. However, PISA data show that cognitive adaptability is more closely aligned with students' beliefs about learning and improvement than with their beliefs about the nature of knowledge itself.

Students who report more cognitive adaptability are more likely to report a growth mindset on average and in almost all countries and economies (Table I.B1.3.25). For example, 75% of students in the top quarter of the index of cognitive adaptability reported a growth mindset whereas about 63% of students in the bottom quarter did (Table I.B1.3.20). The difference between the two is over 30 percentage points in B-S-J-Z (China) and Lebanon. Only in Lithuania and Poland there is no significant difference between the two.

On the other hand, the beliefs that robust and verifiable scientific knowledge is relevant for the validation of true beliefs is not directly associated with these forms of cognitive flexibility in all systems. The specific idea that information from one source should be checked against a range of other reliable sources before it is accepted is a notion that is positively associated with cognitive ability on average across OECD countries and in several systems (29). For example, in Germany, 86% of students with high cognitive adaptability (in the top quarter of the index) reported that they agree that information from one source should be checked against a range of other reliable sources before it is accepted, while 75% of those with low cognitive adaptability did. The gap is smaller but still significant in B-S-J-Z (China),Canada*, Kazakhstan and Macao (China) (between 2 and 3 percentage points of difference). Yet, this association is not consistently found across all countries and economies (Tables I.B1.3.34 and I.B1.3.35).

Therefore, adaptability appears to be more closely connected to how students think about challenge, effort and the possibility of improvement than to how they think about the nature of knowledge itself. This is consistent with the idea that adapting to unfamiliar situations or working through difficulty depends in part on viewing learning as something that can be developed. This distinction helps clarify the kind of cognitive engagement that cognitive adaptability appears to reflect.

The findings analysed here show that cognitive adaptability is best understood as a practical, challenge-oriented dimension of student agency. Students who reported greater adaptability also tended, in many contexts, to report stronger curiosity, higher perseverance and a stronger growth mindset. Cognitive adaptability is thus more closely connected to how students respond to challenge, effort and the possibility of improvement. In this sense, it helps show whether students can remain engaged by adjusting their thinking and behaviour when learning becomes uncertain, demanding or unfamiliar.

Student agency: Self-regulated help seeking and goal setting

The analysis now turns to agency, which refers to the ways in which students actively shape their own learning. In this section, agency is examined through two related dimensions: self-regulated learning help seeking and goal setting.

These dimensions show whether students do more than hold positive beliefs about learning: they indicate whether students seek support when needed, organise their work purposefully and autonomously, adjust strategies and respond to feedback. Examining these forms of agency is therefore an important next step, because they provide a more concrete view of how cognitive engagement is translated into action (Pintrich, 2004[29]; Zimmerman, 2000[30]).

These practices are understood through the lens of student agency, meaning their capacity to act purposefully in relation to their learning (Reeve, 2012[4]; Reeve and Tseng, 2011[6]). These two interrelated dimensions of agency – help seeking and goal setting – are examined in relation to the motivational and behavioural factors discussed in the previous section.

As shown in Table I.3.1, these dimensions of agency tend to align with curiosity and perseverance, although the strength and consistency of these relationships vary. In particular, goal setting appears to be more strongly and consistently aligned, and importantly, the relationship with curiosity appears to be strengthened where teacher support is higher. An inversed pattern is observed with other effort-oriented attitudes, such as growth mindset, which is more strongly and consistently associated with help seeking.

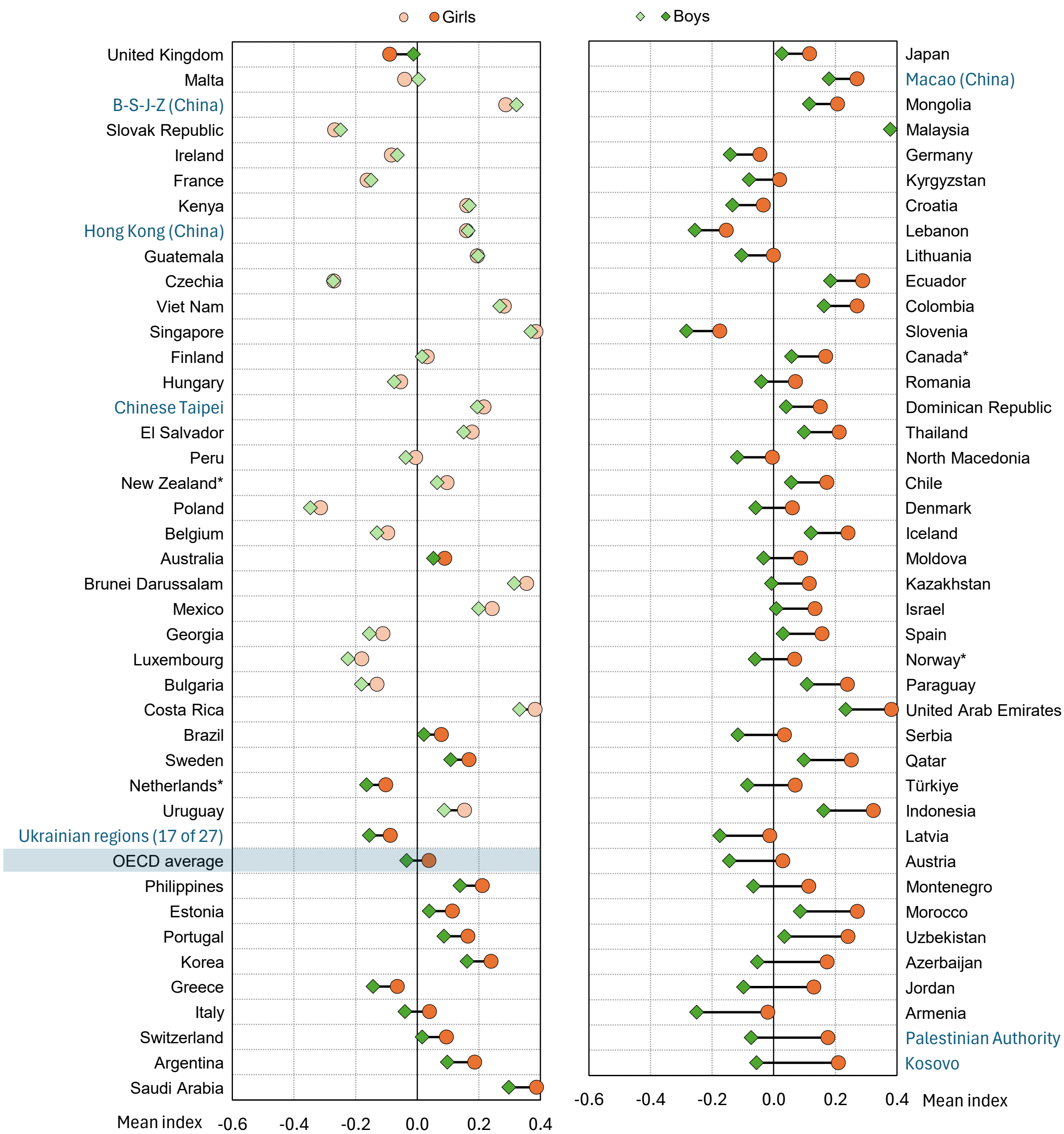
Help seeking

One important dimension of self-regulated learning is the ability to recognise when one's current understanding or strategy is not sufficient, and to act on that recognition. While perseverance matters when students face difficulty, the expectation should not be that they manage every challenge entirely on their own. Agency does not mean solitary effort; it also includes knowing when and how to seek feedback, guidance or support (Zimmerman, 2000[30]). In this sense, help seeking is itself an expression of autonomy (Deci and Ryan, 2000[5]; Reeve, 2012[4]); it reflects a student's capacity to monitor their learning, identify what they need, and take purposeful steps to move forward. As such, seeking support can be understood as an important form of agency, and one that is closely aligned with both growth mindset and perseverance (Cleary and Zimmerman, 2012[8]; Dweck, 2006[20]).

PISA 2025 data suggest that help seeking is a common and broadly shared form of self-regulated learning across OECD countries. About 77% of students across OECD countries reported that they ask for help when they have trouble learning and about the same share reported they ask their teachers for help if they need it, although there is important variation across countries as shown in Figure I.3.o5 (online) (Table I.B1.3.44).

Figure I.3.17. Students' help seeking, by gender

Mean index of help seeking, by gender

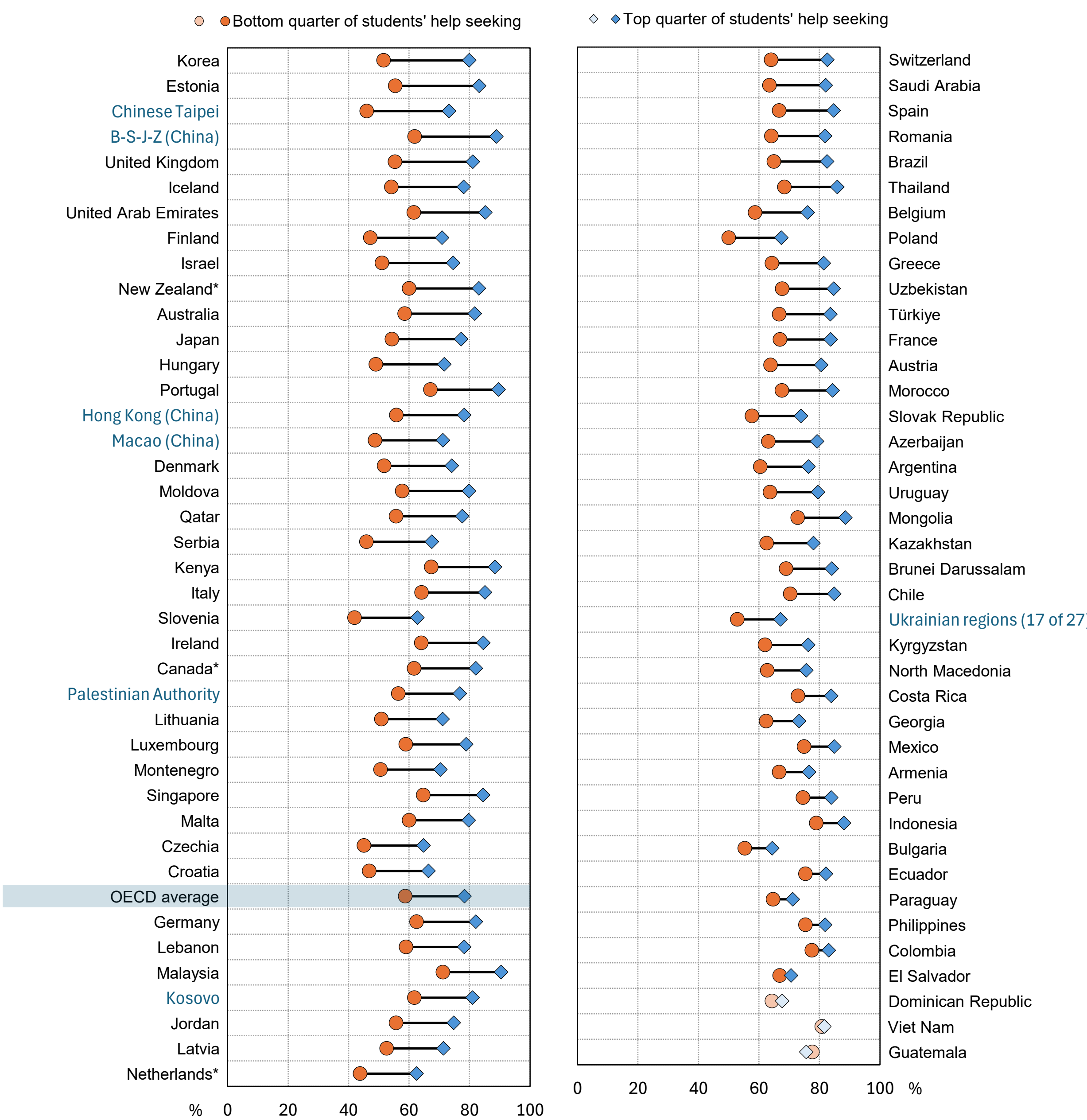


Note: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the difference in mean index of help seeking between boys and girls
Source: OECD, PISA 2025 Database, Table I.B1.3.45. See https://stat.link/143ud5 for the underlying data.

But support is not only vertical, it can also come from one's peers. How students feel about asking their classmates for help gives a sense of students' ability to collaborate and support each other. About 82% of students report asking their classmates when they do not understand something, on average across OECD countries (Figure I.3.o4 online and Table I.B1.3.44).

Figure I.3.18. Students who like learning new things, by level of students' self-regulated help seeking

Percentage of students who agree or strongly agree with the statement "I like learning new things", by quarter of the index of students' help seeking



Note: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the difference in percentage of students who agree or strongly agree "I like learning new things" between those in the top quarter of index of self-regulation and those in the bottom quarter.
Source: OECD, PISA 2025 Database, Table I.B1.3.6. See https://stat.link/143ud5 for the underlying data.

Finally, the combination of effort and seeking support suggests that a student tends to ask for support once they have already tried to sort things out on their own. This combination of perseverance and feedback seeking is one important externalised aspect of students with a growth mindset (Blackwell, Trzesniewski and Dweck, 2007[31]; Dweck, 2006[20]). Across OECD countries, about 78% of students report only asking for help after trying hard to find the solution on their own, on average (Table I.B1.3.44).[7]

PISA data show that girls report greater help seeking than boys, on average (Figure I.3.17). This is also the case in a majority of countries and economies (55). Socio-economically advantaged students also tend to report this to a larger extent than their more disadvantaged peers, on average and across countries and economies (59) (Table I.B1.3.45).

Given the proactive nature of such self-regulated learning attitudes, it is to be expected that such attitudes are closely related to students' curiosity (Table I.B1.3.7). For example, students who engage in such activities are more likely to report liking to learn new things (Table I.B1.3.8). While among students with high self-regulating learning attitudes of help seeking (in the top quarter of the index), 78% of them reported such intrinsic drive to learn; among students with low self-regulated learning attitudes (in the bottom quarter of the index), about 59% did (Figure I.3.18). This is consistent across almost all countries and economies (Table I.B1.3.6).

These positive relationships suggest that students who are drawn to learning may be more likely to treat uncertainty or incomplete understanding as something to work through, and help seeking is one way of doing so. In this sense, help seeking does not appear as a sign of withdrawal from learning, but as one way in which interest in learning is actively sustained. Together with the earlier findings, this pattern indicates that students' internal drive to learn is often connected not only to enjoyment and exploration, but also to a readiness to act on difficulties in constructive ways.

Likewise, students who show these self-regulated help-seeking attitudes are also most likely to report greater perseverance (Table I.B1.3.15). For example, on average, the share of students who report applying additional effort when work becomes challenging is significantly higher among those who report high self-regulated learning (in the top quarter of the index), than among those who report low self-regulated learning (in the bottom quarter of the index), by an average 24 percentage-point difference. This is consistent across almost all countries and economies (Table I.B1.3.14).

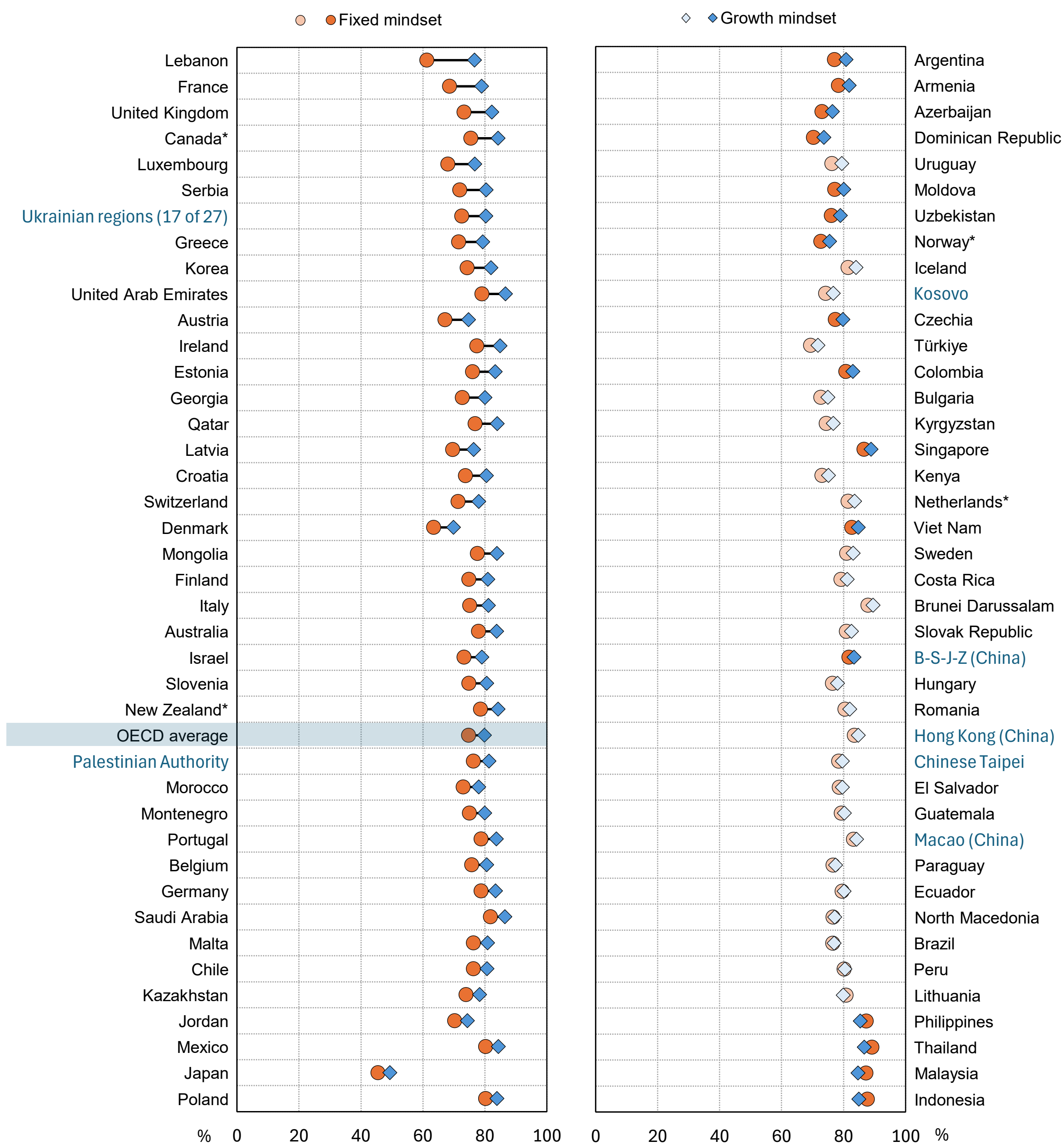
This strong positive relationship with perseverance adds an important nuance to this picture: seeking support is not a sign that students lack persistence, but rather one way in which persistence is expressed. Students who look for feedback or guidance when needed also tend to be those who continue working through difficulty.

This makes growth mindset a natural next step, since it captures the belief that effort, feedback and adjustment can lead to improvement. Having a growth mindset is one of those attitudes that align with students' help- and feedback seeking. A growth mindset is an attitude that does not work in isolation and cannot be reduced to effort alone. It is also about identifying challenging situations that require adequate feedback (OECD, 2025[25]). PISA data show that the relationship between self-regulated attitudes like the ones analysed here relate positively with students reporting a growth mindset. On average and across countries and economies, students who engage in these self-regulated help-seeking attitudes are more likely to report a growth mindset (Table I.B1.3.25).

Perhaps the clearest expression of how these attitudes complement one another, is the willingness to respond to challenge by first trying to work through it and then seeking feedback if needed. As shown in Figure I.3.19, PISA data show that students with a growth mindset are more likely to report only asking for help after trying hard to find the solution on their own (Table I.B1.3.25). Indeed, on average and in most countries and economies (53), more students with a growth mindset report this, showing both perseverance and the flexibility to ask for feedback when needed (Table I.B1.3.48).

Figure I.3.19. Students who only ask for help after trying hard to find the solution on their own, by fixed and growth mindset

Percentage of students who agree or strongly agree with the statement “I only ask for help after trying hard to find the solution on my own”, by fixed and growth mindset



Note: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the difference in percentage of students who agree or strongly agree with the statement "I only ask for help after trying hard to find the solution on my own" between those with growth mindset and those with fixed mindset.
Source: OECD, PISA 2025 Database, Table I.B1.3.48. See https://stat.link/143ud5 for the underlying data.

Moreover, students who report stronger self-regulated help-seeking attitudes are also more likely to hold more developed beliefs about the value of rigorous scientific knowledge and evidence-based information. This is an important link, as navigating one's own learning with autonomy also requires an understanding of how facts are established and how they differ from unsubstantiated information. In this sense, student agency is not only reflected in how learners organise, adapt or seek for help, but also in how they recognise and value reliable forms of knowledge. For example, students with stronger self-regulated help-seeking learning attitudes are more likely to report that they agree that information from one source should be checked against a range of other reliable sources before it is accepted, on average and across almost all countries and economies (Table I.B1.3.35).

Across OECD countries, 85% of students who report high self-regulated help seeking (in the top quarter of the index) report they agree that information from one source should be checked from a range of other reliable sources before it is accepted, on average. On the opposite end, 78% of students who report low self-regulated help seeking agree with this statement. While in 13 education systems the share of student with high self-regulated learning attitudes who agree with source checking is over 90%, in Armenia, Paraguay, Bulgaria, El Salvador, Guatemala and the Dominican Republic (in ascending order), more than 30% of such students disagree with this basic notion of source checking (Table I.B1.3.34).

These results suggest that students who are more likely to seek feedback or guidance when needed also tend to be more likely to view abilities as developable and to value knowledge that is evidence-based and open to scrutiny. Help seeking may not be simply a practical strategy, but part of a wider orientation towards learning in which difficulties are approached as manageable, improvement is seen as possible, and knowledge is understood as something that must be examined and justified. Help seeking thus appears not only as a self-regulated practice, but also as part of a wider cognitive orientation towards learning.

Goal setting

Goal setting represents one of the clearest expressions of student agency in learning. It refers not only to setting objectives, but to organising learning in ways that allow students to monitor progress, identify gaps in understanding, and adjust their strategies when needed. Planning, checking one's own understanding, making summaries, and revising one's approach are all part of this process. In this sense, goal setting lies at the centre of self-regulated learning, as it is embedded in a broader cycle of planning, monitoring and adjusting learning strategies through which students actively direct their work rather than simply responding to immediate demands (Pintrich, 2004[29]; Cleary and Zimmerman, 2012[8]; Zimmerman, 2000[30]).

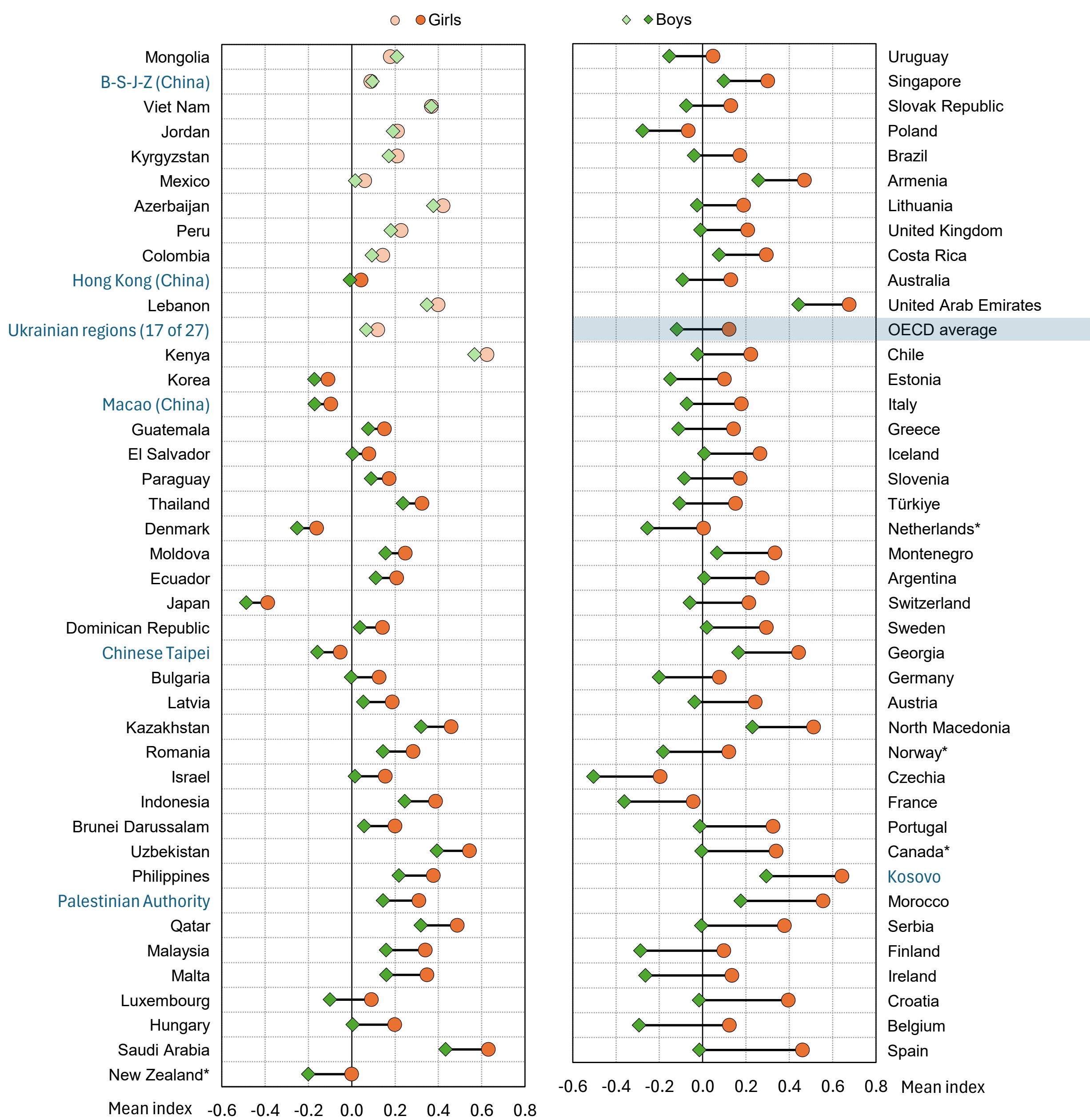
Goal setting is not a widespread dimension of student agency. Across OECD countries, slightly over one-third of students (37%) reported planning their approach to learning often or very often (Figure I.3.20). Also, slightly over one-third (35%) reported making summaries of the most important points without using their documents in order to identify gaps in their knowledge. Slightly more students, almost half (49%) do often or very often ask themselves questions about the material to check if they have understood everything and 44% change their approach to studying if they notice it is not successful, on average (Table I.B1.3.49).[8]

As shown in Figure I.3.20, girls tend to report higher goal setting attitudes than boys. In no country/economy do PISA data show the inverse and in 12 systems, there are no differences between boys and girls. Likewise, when looking at students' socio-economic status, on average and across participating countries and economies, more advantaged students report more goal setting attitudes than their disadvantaged peers. Only in Kenya and Peru, there are no differences by students' socio-economic status (Table I.B1.3.50).

Importantly, the individual drive to learn can be a factor behind these forms of agency. PISA data show that curiosity is consistently positively related to goal setting, and that students who report using these planning and self-verification techniques most often are also those who report being intrinsically motivated to learn (liking to learn new things), twice as much on average across the OECD, after accounting for students' and schools' socio-economic profile (Tables I.B1.3.7 and I.B1.3.8). As shown in Figure I.3.21, on average across the OECD, 83% of students with more goal-setting attitudes reported liking to learn new things, while the share is 57% for students with less goal-setting attitudes. The gap with respect to students with low goal-setting attitudes is quite large, at 26 percentage points.

Figure I.3.20. Students' goal setting, by gender

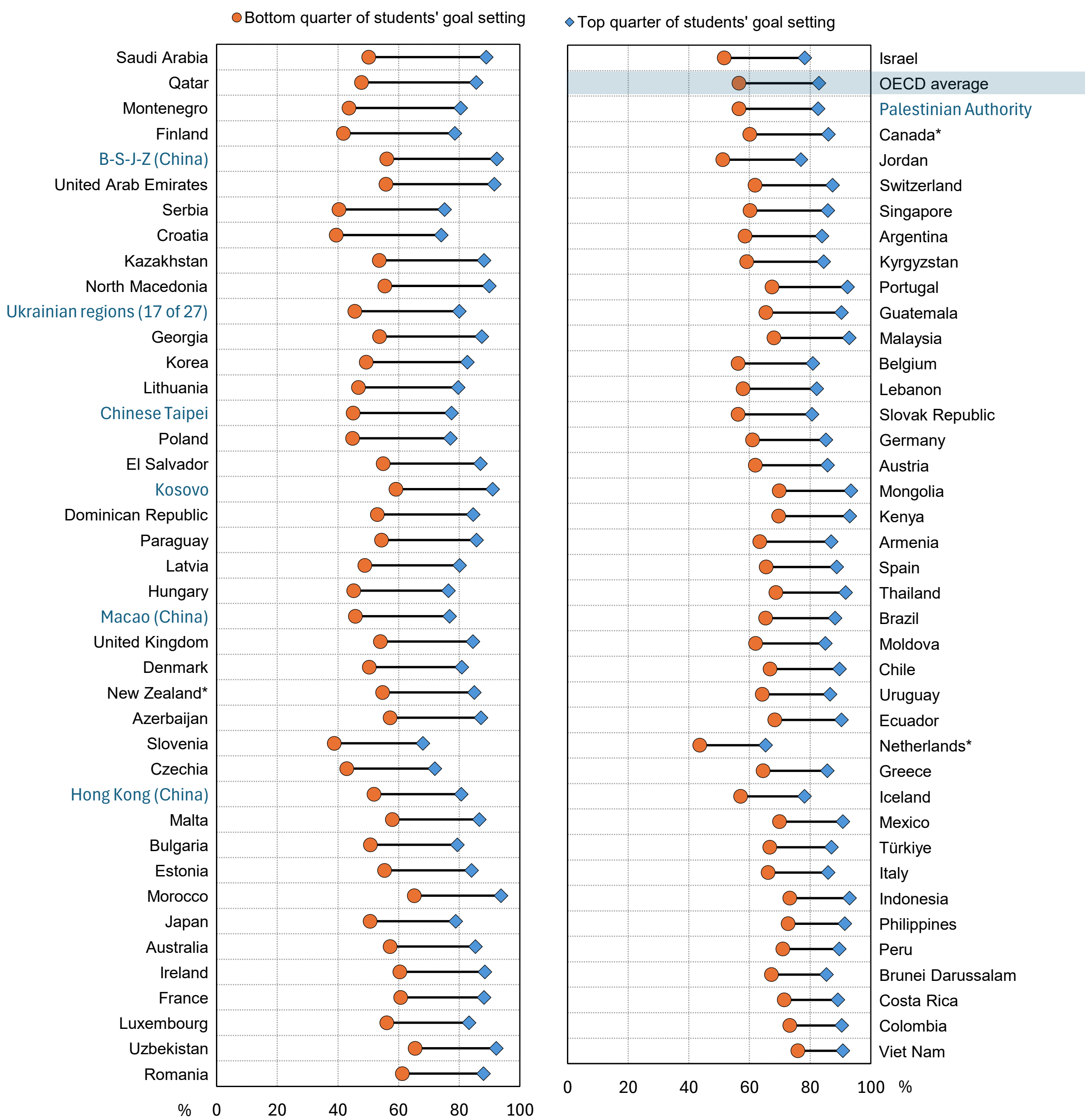
Mean index of goal setting, by gender



Note: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the difference in mean index of goal setting between boys and girls.
Source: OECD, PISA 2025 Database, Table I.B1.3.50. See https://stat.link/143ud5 for the underlying data.

Figure I.3.21. Students who like to learn new things, by self-regulated goal setting

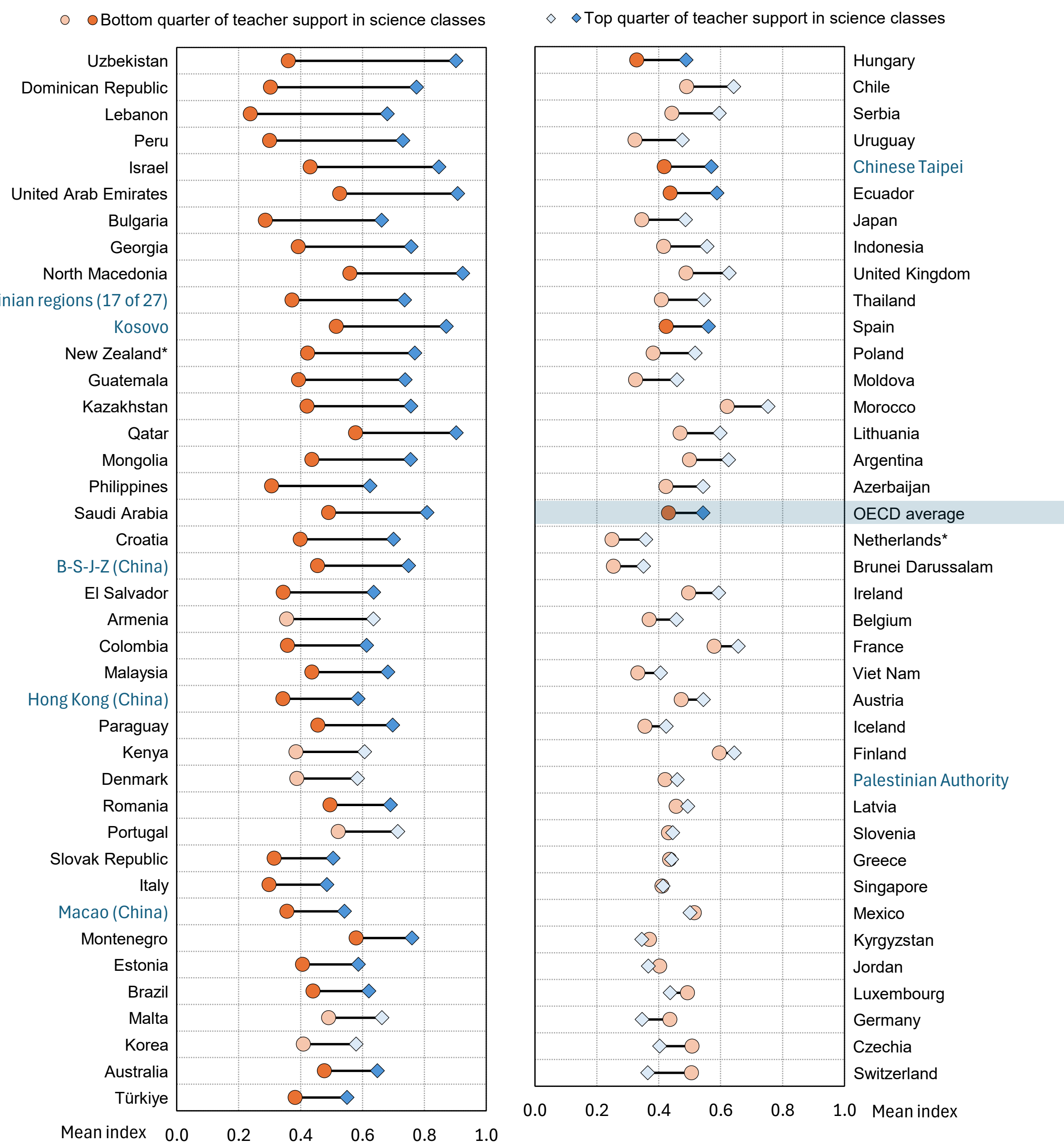
Percentage of students who agree or strongly agree with the statement "I like learning new things", by quarter of the index of students' goal setting



Note: Only countries and economies with available data are shown.
All differences between top and bottom quarters are statistically significant (see Annex A3).
Countries and economies are ranked in descending order of the difference in percentage of students who agree or strongly agree with the statement "I like learning new things" between those in the top quarter of the index of goal setting and those in the bottom quarter.
Source: OECD, PISA 2025 Database, Table I.B1.3.6. See https://stat.link/143ud5 for the underlying data.

Figure I.3.22. Relationship between students' curiosity and goal setting, by teacher support

Change in the index of goal setting when students agree or strongly agree with the statement "I like learning new things", by quarter of teacher support in science classes



Notes: Only countries and economies with available data are shown.
All differences are accounting for gender and students' and schools' socio-economic profile, measured by the PISA index of economic, social and cultural status (ESCS).
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the difference in change of index of goal setting when students agree or strongly agree "I like learning new things" between those who are in the top and bottom quarter of teacher support in science classes.
Source: OECD, PISA 2025 Database, Table I.B1.3.52. See https://stat.link/143ud5 for the underlying data.

This positive relationship suggests that students' internal drive to learn is more likely to be translated into organised study behaviour when it is accompanied by a clearer sense of direction. In this sense, self-regulated goal setting could therefore be read as one of the mechanisms through which students' motivation becomes organised rather than remaining diffuse or episodic.

The relationship between the internal concept of motivation and proactively taking action to lead one's own learning can be also dependent on other factors. PISA 2025 data suggest that teachers have a role to play. For example, the relationship between this form of student agency and reporting a curiosity to learn is stronger among students who report receiving support from their teachers. As shown in Figure I.3.22, on average and in 38 systems, the relationship between student motivation and agency is strengthened by high teacher support, after accounting for gender, and students' and schools' socio-economic profile (Table I.B1.3.52).

That teacher support may positively moderate this relationship suggests that motivation alone does not equally translate into goal setting across contexts. In some systems, where students perceive greater teacher support, their motivation could be more closely aligned with organised and self-regulated study behaviour. This reinforces the notion that agency should not be understood as operating in isolation from context, but as something that may be strengthened when students are supported in turning motivation into purposeful action.

Moreover, as these attitudes can be considered a proxy for student agency in learning, is not surprising that PISA 2025 data show that they are consistently related to student perseverance, after accounting for students' and schools' socio-economic profile (Table I.B1.3.15). This gives self-regulated goal setting a distinctive place as a more strategic side of agency: it is the point at which interest and effort can be channelled into a planned course of action. Indeed, these relationships suggest that students' engagement is strongest not simply when they want to learn or when they keep trying.

What, then, does this form of agency imply about students' beliefs about their own abilities? PISA data show that, on average across OECD countries, students who report this type of agency are more likely to report a growth mindset, after accounting for students' and schools' socio-economic profile. However, this relationship is far from universal. In 22 participating systems, the inverse is true and students who report this sort of agency are also likely to report a fixed mindset. Yet, in over one-third of countries and economies, there is no direct relationship between the two (Table I.B1.3.25).

However, when examining individual practices, different patterns emerge. For example, across participating countries and economies, students who report that they often ask themselves questions about the materials they study to check if they have understood everything, also are more likely to report a growth mindset. Only in five systems, the opposite is true (Table I.B1.3.25). In contrast, when students report that they often make a summary of the most important points without using their documents in order to identify knowledge gaps, the association with growth mindset is largely non-existent (as on average) and in 28 systems, such students are more likely to report a fixed mindset (Table I.B1.3.25).

Most likely, self-regulated goal setting does not represent a single form of agency with the same meaning across students. Some behaviours may reflect more proactive and future-oriented forms of self-regulation, which are more closely aligned with the belief that abilities can improve through effort. Others may reflect more immediate checking or corrective strategies, which can be used for different reasons and not necessarily as part of a broader growth-oriented view of learning. The mixed pattern does not necessarily weaken the importance of goal setting, but rather shows that its different components may be connected to students' beliefs about improvement in distinct ways.

Overall, these findings suggest that self-regulated goal setting is a key strategic dimension of student agency. It is positively related to curiosity and perseverance, indicating that students' motivation is more likely to take organised form when it is translated into planning, monitoring and adjustment. The relationship with student drive to learn is also stronger where teacher support is higher, underlining that agency depends partly on the conditions in which students learn. At the same time, the mixed relationship with growth mindset shows that goal setting is not a single, uniform form of engagement: its different practices may carry different meanings for different students. Goal setting is therefore best understood as a set of self-regulated behaviours through which students organise, monitor and adapt their learning, but whose meaning may vary across students and situations.

Box I.3.3. Students’ enjoyment of science and cognitive activation in science classes

Cognitive activation refers to teaching practices that prompt students to think deeply, explain ideas, connect concepts, solve non-routine problems and reflect on evidence. In science, these practices overlap with inquiry-based teaching, where students are encouraged to ask questions, formulate hypotheses, interpret evidence and reflect on conclusions.

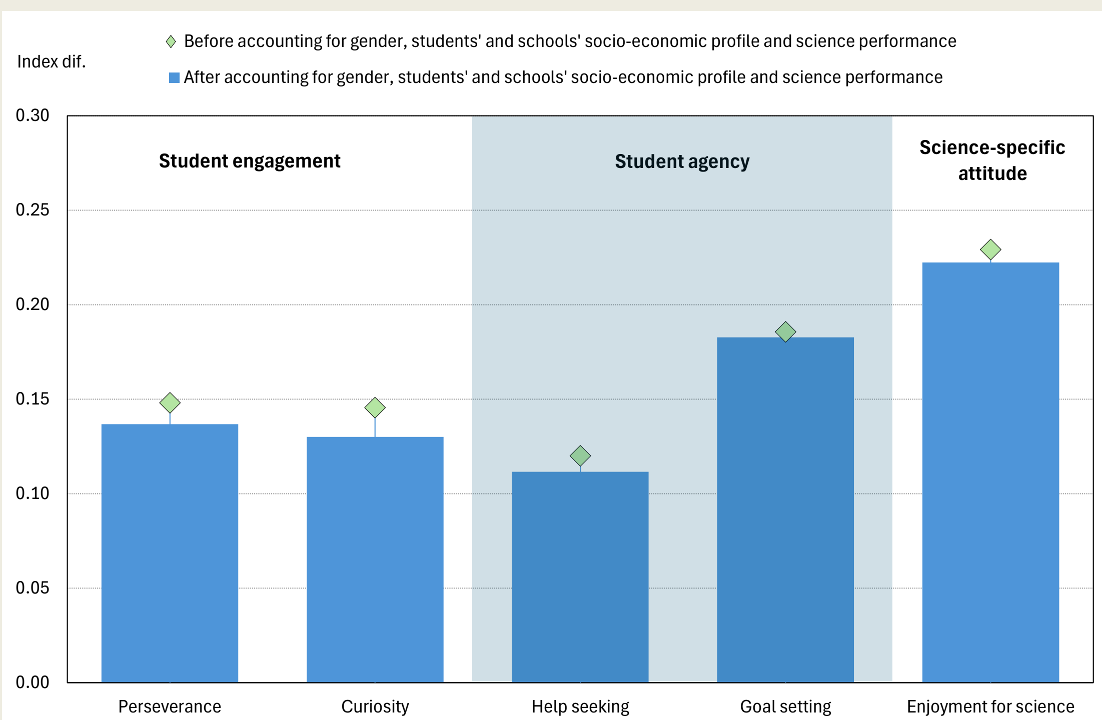
PISA asks students how often teachers ask them to think about how new and old scientific topics are related, to explain a scientific principle, to explain how to design an experiment to address a scientific problem, to keep trying even when facing difficulties with a science task, and to memorise scientific facts.[9] These practices capture the extent to which students are actively engaged in making sense of scientific ideas, rather than passively receiving information.

These practices matter for engagement because classroom processes shape not only what students learn, but also how they experience learning (Wang et al., 2026[32]). This is especially relevant for enjoyment of science, which is closely linked to students’ interest, perceived competence and the value they attach to learning. Therefore, cognitively activating instruction may relate to both the cognitive and emotional aspects of engagement.

PISA 2025 data show that across systems, students in the top quarter of cognitive activation reported higher enjoyment of science, curiosity, perseverance, self-regulation and goal setting (Table I.B1.3.60).

Figure I.3.23. Cognitive activation in science classes and students' attitudes toward learning and science

Change in PISA index of cognitive activation in science classes by a one-unit increase in the PISA indices for students’ attitudes and beliefs, OECD average



Note: All differences are statistically significant (see Annex A3).
Source: OECD, PISA 2025 Database, Table I.B1.3.61. See https://stat.link/143ud5 for the underlying data.

Students' enjoyment of science relates positively and strongly with cognitive activation in science classes, showing that both cognitively engaging lessons and how students feel about learning science are very often intertwined.

It is also important to note that, across systems, cognitive activation in science classes is positively associated with science performance (Table I.B1.3.59). Nevertheless, the patterns described above – namely the positive relationships between cognitive activation and students' enjoyment of science, curiosity, perseverance, self-regulation and goal setting – remain largely unchanged after accounting for science performance (Table I.B1.3.61). These relationships are not necessarily driven simply by higher-achieving students. In other words, they likely reflect differences in students' classroom experiences, rather than differences in prior achievement alone.

These findings suggest that cognitively activating teaching is associated not only with stronger learning-related behaviours, but especially with students' enjoyment of science and their broader engagement with learning. Strengthening teachers' capacity to design cognitively engaging science lessons may therefore support both learning and students' enjoyment of science. From a policy perspective, this implies going beyond curriculum coverage to focus on how students engage with content: supporting teachers to design tasks that require explanation, reasoning and reflection, and ensuring that such practices are combined with supportive classroom environments, may help foster both deeper understanding and more positive attitudes towards science.

Sense of belonging and the value of school for students

This section shifts the focus to the affective dimension of the student experience (Fredricks, Blumenfeld and Paris, 2004[1]), specifically exploring social engagement through the lens of students' sense of belonging at school and their views on the value of school. Belonging encompasses the extent to which students feel personally accepted, respected and included within the school community, contrasting directly with feelings of loneliness, social isolation or feeling like an outsider (Osterman, 2000[33]; Voelkl, 1996[34]). While much of the literature highlights the overt struggles of students who exhibit both low academic performance and report a low sense of belonging, it is equally critical to recognise that emotional disengagement can occur silently among students with average or even high academic performance (Janosz et al., 2008[35]). A student may fulfil the procedural requirements of schooling, complete their work, and maintain average grades, yet still feel disconnected from school (Finn, 1989[36]; Janosz et al., 2000[37]).

Although a student's sense of value of school and belonging may not be a direct outcome of academic instruction alone – stemming instead from the broader social climate, peer relationships and interpersonal support – it is linked to the motivational and cognitive dimensions discussed in previous sections of this chapter (Pianta, 1999[38]; Wentzel, 2004[39]). When students feel school has value, they belong and are making friends easily, this emotional security satisfies a fundamental need for relatedness, acting as an affective catalyst that nurtures intrinsic and instrumental motivation, curiosity and the development of a growth mindset (Deci and Ryan, 2000[5]; Furrer and Skinner, 2003[40]).

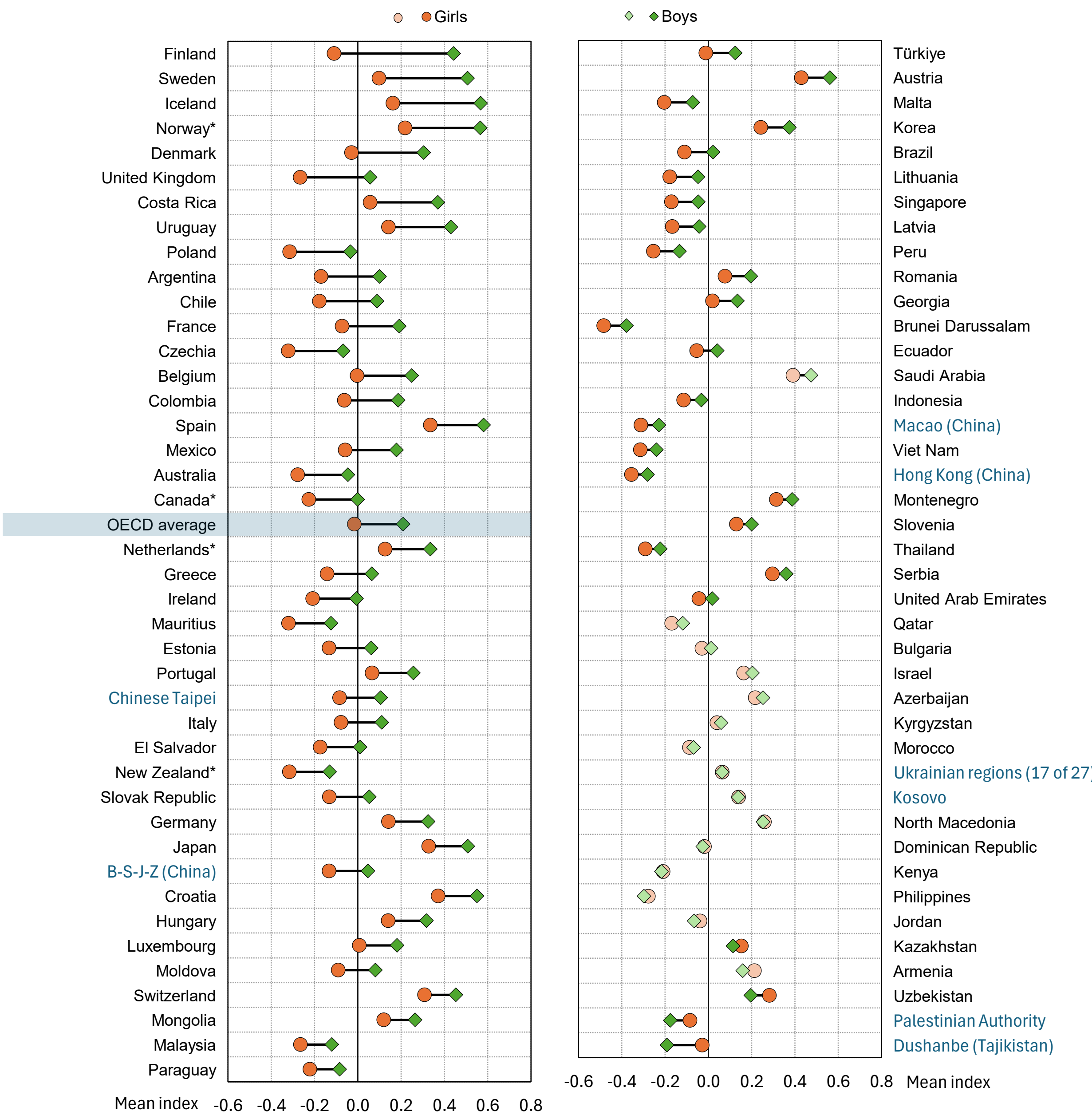
As shown in Table I.3.1, students' sense of belonging at school is positively and consistently aligned with curiosity and perseverance, and these relationships are strengthened by teacher support. It is also linked to the dimensions of agency, goal setting and help seeking, as well as to students' beliefs about the nature of science and growth mindset. Sense of belonging and school value also tend to align with one another, whereas school value and curiosity often move in opposite directions.

Sense of belonging at school

A sense of belonging at school captures one of the most basic affective dimensions of student engagement: whether students experience school as a place where they feel accepted, included and socially connected. In practice, this concerns whether students feel that they belong at school, whether they can make friends easily, and whether they are generally free from feeling like outsiders, awkward or lonely in the school environment. In this sense, belonging is not simply a social outcome that sits alongside learning. It reflects the emotional conditions under which students experience school and, therefore, the extent to which the school environment provides a sense of interpersonal security and recognition.

Figure I.3.24. Sense of belonging at school, by gender

Mean index of sense of belonging at school, by gender



Note: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the difference in mean index of sense of belonging between boys and girls.
Source: OECD, PISA 2025 Database, Table I.B1.3.65. See https://stat.link/143ud5 for the underlying data.

PISA 2025 data show that a large majority of students do report feeling they belong at school, and it is a place where they make friends. On average across OECD countries, most students agree they feel like they belong at school (76%), other students seem to like them (83%) and that they make friends easily at school (80%). A majority also disagrees that they feel like an outsider (or left out of things) at school (85%), feel awkward and out of place (81%) and feel lonely at school (87%) (Table I.B1.3.62). Across countries and economies there is some variation, as shown in Figure I.3.24.

Boys tend to report significantly higher sense of belonging at school than girls, on average across OECD countries and in most countries and economies (63) (Figure I.3.24). Only in Dushanbe (Tajikistan), Kazakhstan, the Palestinian Authority and Uzbekistan, girls report a higher sense of belonging at school than boys. Likewise, socio-economically advantaged students report a higher sense of belonging at school than their disadvantaged peers, on average and in most countries and economies. Kenya is the only country where the opposite is true.

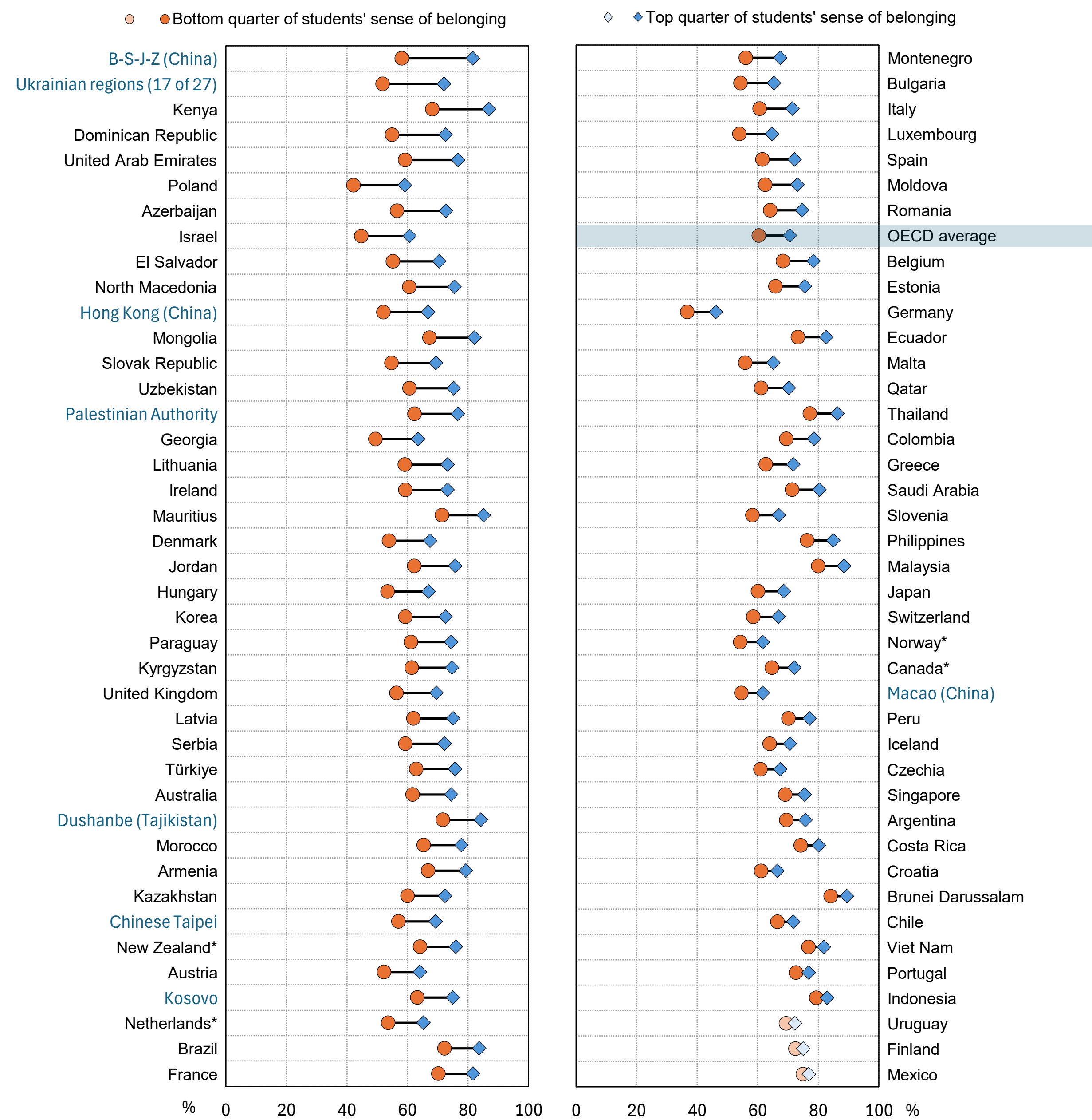
Despite this persistent gender and socio-economic differences, trends over time point to a broad improvement in students' sense of belonging. Between 2022 and 2025, students' sense of belonging at school increased in most participating countries and economies with comparable data for both cycles (Table I.B1.3.63). Moreover, in many systems (39), more students reported that they feel they belong at school than students did in 2022, and also that they make friends easily at school (64) (Table I.B1.3.64). Likewise, the share of students who do not feel lonely at school (i.e. who disagreed or strongly disagreed with that statement) increased in most systems (48).

This broad improvement is particularly noteworthy given the close relationship between sense of belonging and other positive attitudes towards learning. PISA data show a positive relationship between students' intrinsic motivation to learn (i.e. when they report that they like to learn new things) and their sense of belonging at school, on average and across all countries and economies, after accounting for gender and students' and schools' socio-economic background (Table I.B1.3.68). Likewise, there is a positive relationship between sense of belonging and student curiosity across all participating countries and economies, after accounting for gender and students' and schools' socio-economic background (Table I.B1.3.68).

Moreover, students who report a high sense of belonging at school also are more likely to believe school has a use, for example to think that school has taught them things that can be useful in a job, on average and across most countries and economies. This is one dimension of the value of school that will be analysed next. However, due to its close relationship with students' sense of belonging at school, it is interesting to note that, on average, 71% of students who report a high sense of belonging (in the top quarter of the index) believe school has taught them things that can be useful in a job, while 60% of students with low sense of belonging (in the bottom quarter) do (Figure I.3.25 and Table I.B1.3.67). In B-S-J-Z (China) and the Ukrainian regions (17 of 27), the difference is over 20 percentage points.

Figure I.3.25. Students who believe school has taught them things useful in a job, by level of students' sense of belonging

Percentage of students who agree or strongly agree that "School has taught me things which could be useful in a job" by quarter of the index of students' sense of belonging

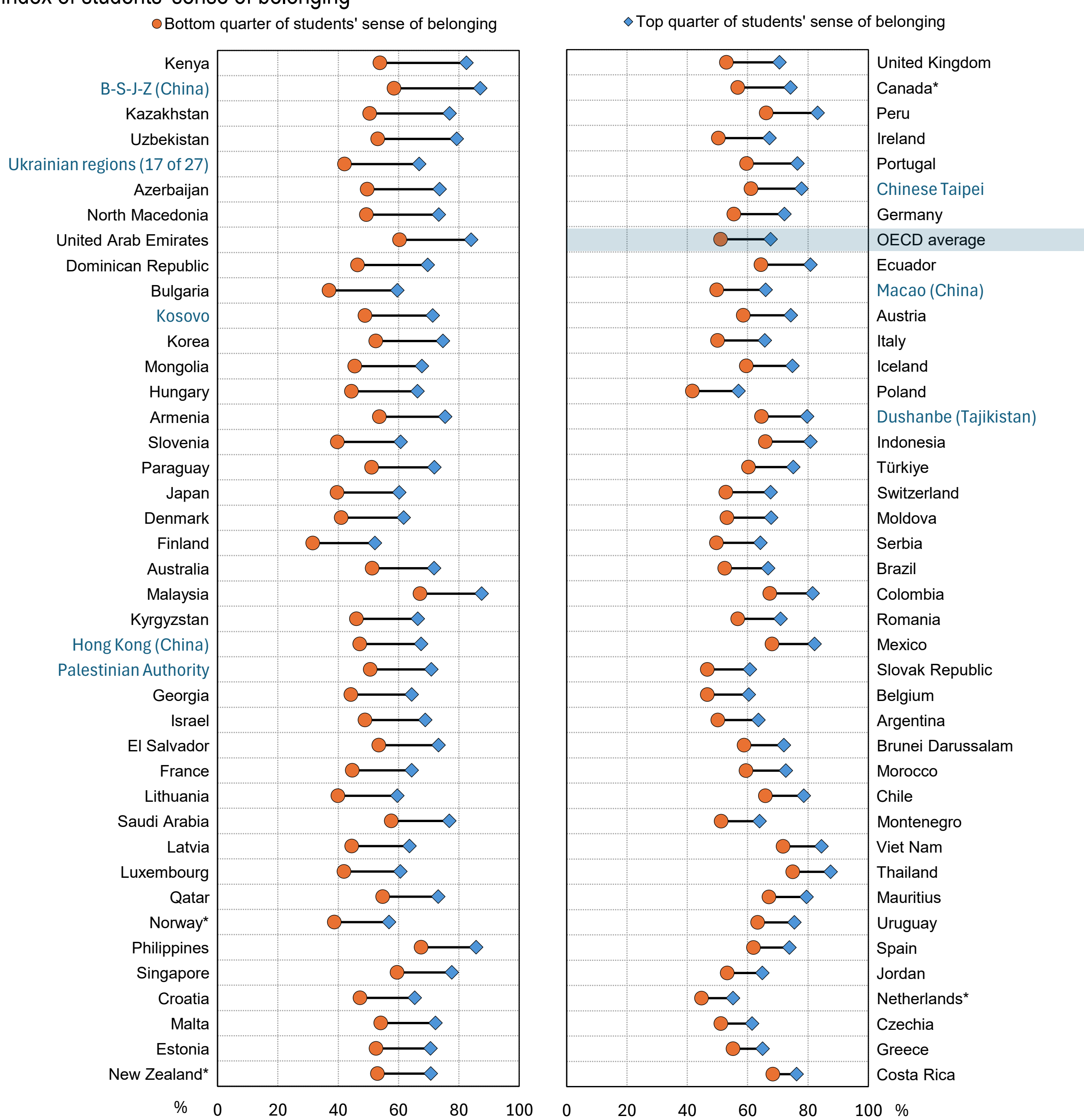


Note: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the difference in percentage of students who believe school has taught them things useful in a job between those who are in the top and bottom quarter of sense of belonging.
Source: OECD, PISA 2025 Database, Table I.B1.3.67.See https://stat.link/143ud5 for the underlying data.

PISA data show a positive relationship between sense of belonging and student perseverance across all participating countries and economies, after accounting for gender and students' and schools' socio-economic background (Table I.B1.3.68). About 68% of students with high sense of belonging (in the top quarter of the index) report they apply additional effort when work becomes challenging, while about 51% who report low sense of belonging do. The difference between the two can be as large as 29 percentage points, as in B-S-J-Z (China) and Kenya (Figure I.3.26 and Table I.B1.3.67).

Figure I.3.26. Students who apply additional effort when work becomes challenging, by level of students' sense of belonging

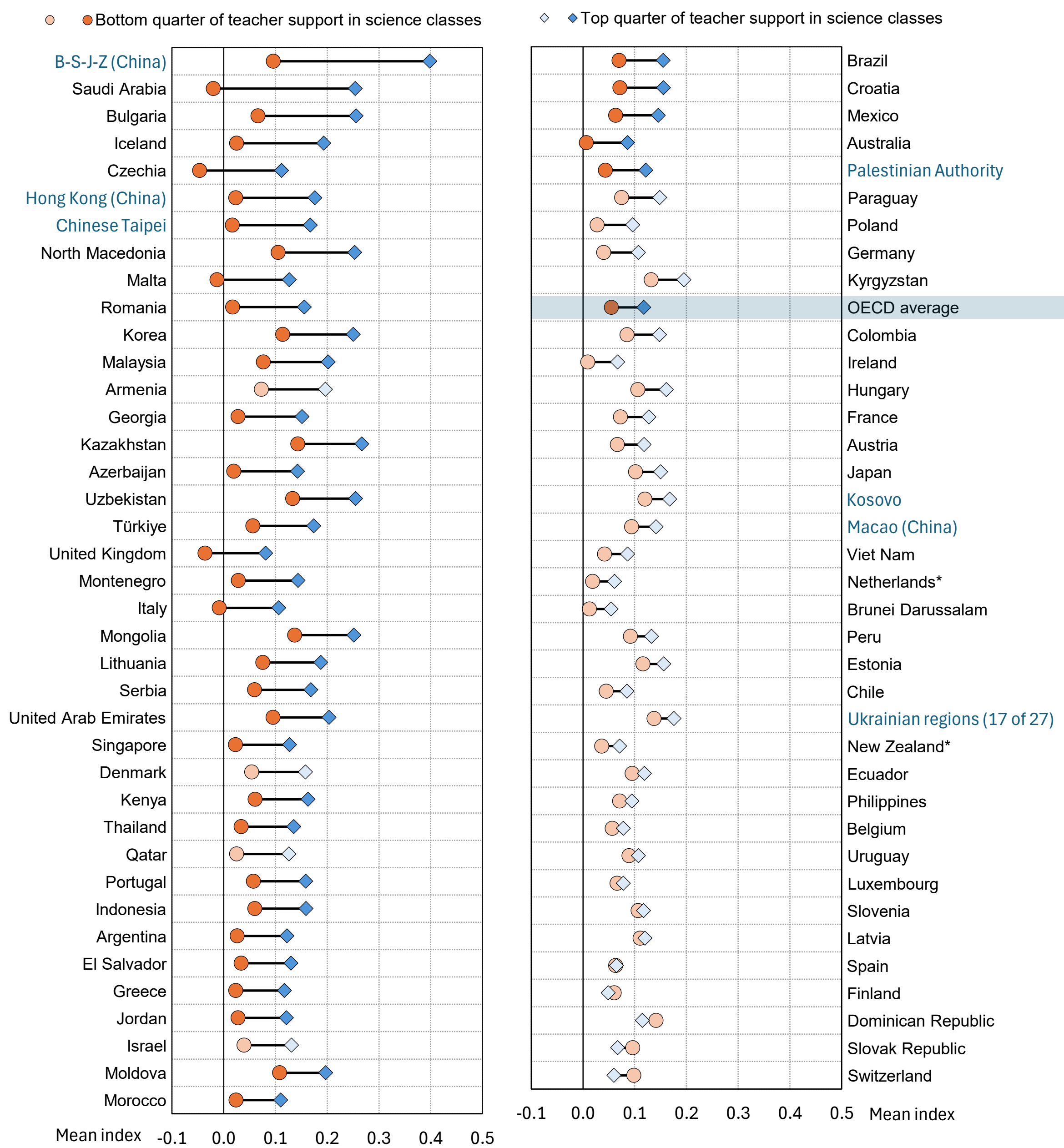
Percentage of students who agree or strongly agree that "I apply additional effort when work becomes challenging" by quarter of the index of students' sense of belonging



Note: Only countries and economies with available data are shown.
All differences between bottom and top quarters are statistically significant (see Annex A3).
Countries and economies are ranked in descending order of the difference in percentage of students who apply additional effort when work becomes challenging between those who are in the top and bottom quarter of sense of belonging.
Source: OECD, PISA 2025 Database, Table I.B1.3.67. See https://stat.link/143ud5 for the underlying data.

Figure I.3.27. Relationship between students' curiosity and sense of belonging, by level of teacher support

Change in the index of sense of belonging associated with a one-unit increase in the index of curiosity, by quarter of teacher support in science classes



Note: Only countries and economies with available data are shown.
All differences are accounting for gender and students' and schools' socio-economic profile, measured by the PISA index of economic, social and cultural status (ESCS).
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the difference in change of index of sense of belonging associated with a one-unit increase in the index of students' curiosity between those who are in the top and bottom quarter of teacher support in science classes.
Source: OECD, PISA 2025 Database, Table I.B1.3.69. See https://stat.link/143ud5 for the underlying data.

Feeling socially connected at school is aligned not only with wanting to learn, but also with continuing to engage when schoolwork becomes difficult. Yet, belonging does not operate in a vacuum. Whether feeling connected to school is actually reflected in greater curiosity and stronger perseverance may also depend on the extent to which students experience their teachers as supportive.

Interestingly, on average and in a large number of countries and economies (40 and 37), the relationship between students' motivational and resilient attitudes, and sense of belonging at school is moderated by their teachers' support, which includes students' perception of teachers' attitudes in the classroom (whether the teacher shows an interest in every student's learning, gives extra help when students need it, helps students with their learning, continues teaching until the students understand and gives students an opportunity to express opinions) (Figure I.3.27 and Table I.B1.3.69). Both curiosity and perseverance are more strongly related to sense of belonging in school when students report high teacher support with respect to their peers who report low teacher support (Table I.B1.3.69).

The fact that teacher support strengthens the relationship between belonging and curiosity, and between belonging and perseverance, suggests that emotional connection to school is more closely linked to active engagement where students also feel supported by teachers in their learning environment. Where students feel both that they belong and that teachers are available, encouraging and responsive, they are not only more likely to be interested in learning, but also more likely to sustain effort when learning becomes difficult. Thus, engagement should not be understood as something students must generate on their own. A sense of belonging appears to matter most where the school environment, and especially teacher support, helps make that belonging meaningful for learning as well as for social inclusion.

Whether students also hold beliefs that make challenge itself more manageable is also relevant. This is where growth mindset becomes important. Students with a stronger sense of belonging are more likely to report having a growth mindset, on average and in most countries and economies (Table I.B1.3.67). In some systems, however, the relationship could be driven by student performance in science (Table I.B1.3.68). On average, among students with high sense of belonging (those in the top quarter of the index) 73% reported a growth mindset, while 64% of those who reported a low sense of belonging (in the bottom quarter of the index) did so. Yet, the gap can be as large as 32 percentage points in B-S-J-Z (China).

Moreover, a similar positive relationship is also observed for the other two dimensions of cognitive engagement showing the positive alignment between these forms of engagement: students who feel that they belong at school are likely to be those who report more rigorous beliefs about the nature of science, as well as those who adapt when learning becomes demanding or unfamiliar (Table I.B1.3.68).

Finally, sense of belonging also relates positively with the two different dimensions of student agency discussed earlier: self-regulated help seeking and goal setting (Table I.B1.3.68). The positive relationship between sense of belonging and these dimensions of student agency suggests that social engagement is closely connected to how students manage their learning in practice. Students who feel that they belong at school are more likely to report seeking support when needed and setting goals and organising their work. This indicates that belonging is not only associated with feeling socially included, but also with forms of agency through which students actively navigate their learning. In this sense, belonging may be understood as part of the relational and emotional foundation on which students are better able to ask for help, regulate their work and respond flexibly to challenge.

These findings suggest that sense of belonging at school is not a peripheral aspect of school life, but one of the emotional conditions through which engagement with learning is sustained. Its positive relationships with motivation, perseverance, growth mindset and the different forms of student agency examined in this chapter indicate that feeling accepted, included and socially at ease at school is closely aligned with how students approach learning more broadly. This reinforces an important point raised throughout these analyses. What matters is not the image of a particularly resilient or self-driven student, but whether schools provide environments in which students can feel socially recognised, emotionally secure and able to engage. In this sense, belonging helps shift the focus from individual dispositions alone to the relational conditions that make engagement more possible for all students.

The value to learn in school: Instrumental motivation

While the intrinsic motivation analysed so far is closely linked to curiosity and refers to engaging in learning for its inherent interest, enjoyment or satisfaction, instrumental motivation refers to the perceived importance or future usefulness of academic work and schooling (Deci, 2013[9]; Eccles and Wigfield, 2002[10]). The analysis now turns to students' views of the value of school, as one expression of instrumental motivation to learn. In PISA, this dimension is examined through whether students believe that school teaches things that are useful for future employment or adult life, or whether they see school as a waste of time.

PISA data show that, across OECD countries, 67% of students believe that school has taught them things that could be useful in a job. Cross-country differences remain substantial, however (Table I.B1.3.70). Moreover, 51% of students, on average across OECD countries, reported that school has prepare them for adult life, while 24% reported that school has been a waste of time (Table I.B1.3.70).

Taken together, students' views of school's usefulness remain positive in many systems, but are far from uniform and, in a sizeable number of cases, coexist with much more sceptical views of school's value.

Trends over time present a mixed picture. As shown in Figure I.3.28, in 11 systems the share of students reporting that school has prepare them for adult life decreased between 2022 and 2025. The decrease was largest – by more than 5 percentage points – in Austria, Czechia, Macao (China) and Poland where fewer than half of students reported disagreeing with this statement in 2025. In 36 systems, however, the opposite pattern is observed: the share of students who disagreed with this negative view of school is larger in 2025.

A similar pattern can be seen for the statement that school has been a waste of time. In Costa Rica, Czechia, Denmark, Germany, Latvia, Macao (China), the Netherlands* and Chinese Taipei, the share of students reporting this increased slightly, by between 2 and 4 percentage points, between 2022 and 2025. Even in these systems, however, at least 65% of students reported disagreeing or strongly disagreeing with the statement in 2025. In 40 countries and economies, the share of students disagreeing or strongly disagreeing that school has been a waste of time increased over the same period (Table I.B1.3.71). These trends suggest that students' instrumental views of school did not move uniformly between the two PISA cycles: in many systems they became more positive, but in others a more sceptical view of school's usefulness also gained ground.

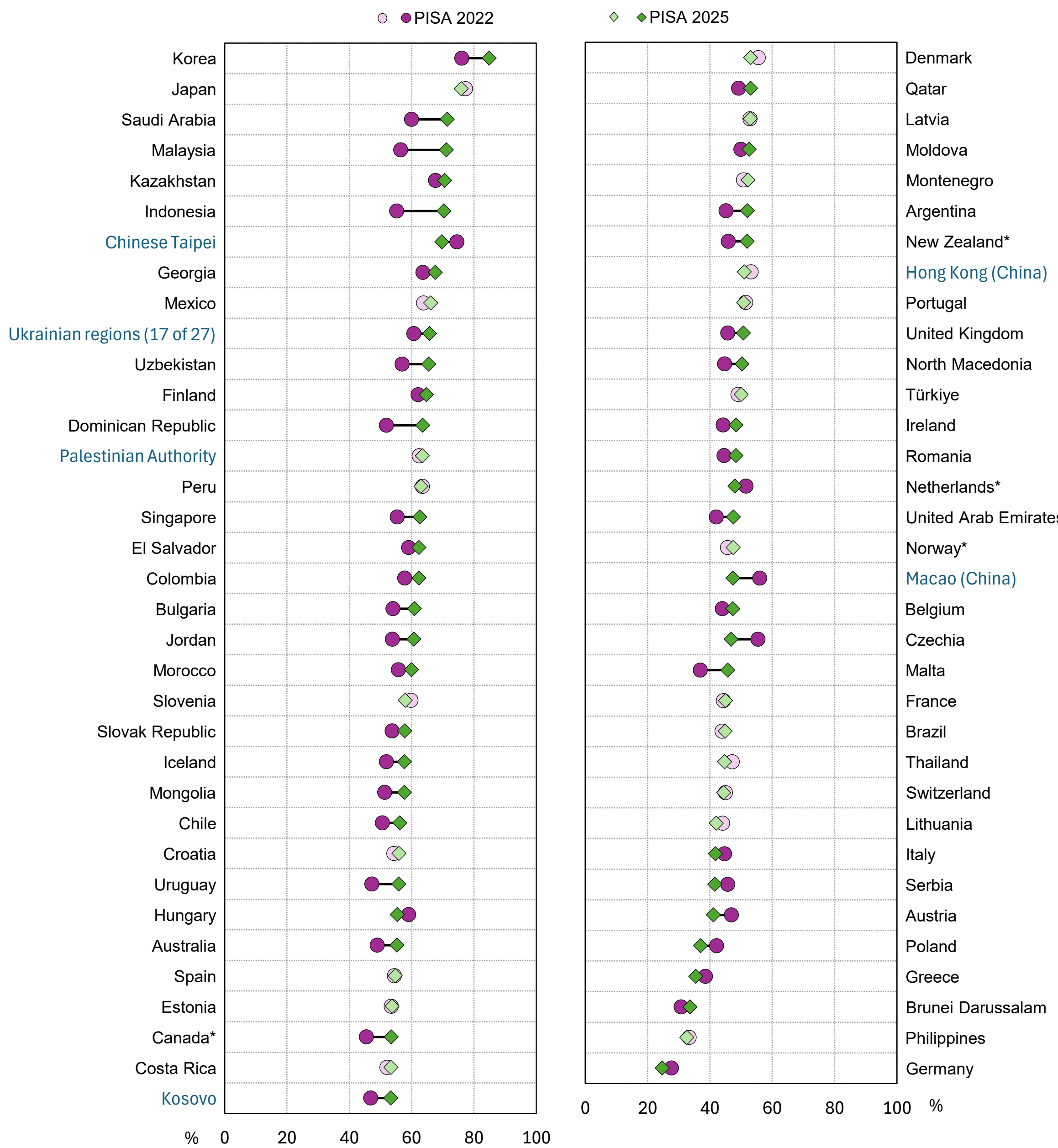
As with other indicators, average levels can conceal meaningful differences across groups of students. On average across OECD countries, girls reported more often than boys that school has taught them things which could be useful in a job, with an average gap of 7 percentage points. This pattern is relatively consistent across participating countries and economies, with gaps ranging from about 15 to 17 percentage points in Jordan, Kosovo and the Palestinian Authority to less than 4 percentage points in Australia, the Ukrainian regions (17 of 27) and the United Kingdom. In eight participating systems, there are no differences between boys' and girls' reports (Table I.B1.3.73). Socio-economic differences are less consistent. Although socio-economically advantaged students are more likely, on average across OECD countries, to report this instrumental view of school, the gap is much smaller, at 2 percentage points. A larger share of advantaged students reported this view in 24 countries and economies, while in 15 systems the opposite pattern is observed and in 48 systems, there are no differences (Table I.B1.3.73). These results suggest that students' views of school's usefulness are not distributed evenly across groups, but that gender differences are more systematic than socio-economic differences.

Students' views of the value of school also connect to whether motivation is sustained when learning becomes demanding. Across participating countries and economies, students who see school as useful for their future – both for adult life and for a job – also tend to report greater perseverance, on average. Less positive views of school are generally associated with weaker perseverance (Tables I.B1.3.15 and I.B1.3.76).

This places instrumental motivation alongside curiosity and perseverance as part of a broader picture of students' motivation to learn. Curiosity captures students' interest in learning, while instrumental motivation captures whether they see school as worthwhile and useful for their future. Perseverance adds a behavioural dimension by indicating whether these motivations are sustained when learning becomes challenging. In this respect, engagement depends not only on the interest generated by learning, but also on whether students see the effort involved in schooling as worth sustaining.

Figure I.3.28. Change in students who disagree that school has done little to prepare them for adult life between PISA 2022 and PISA 2025

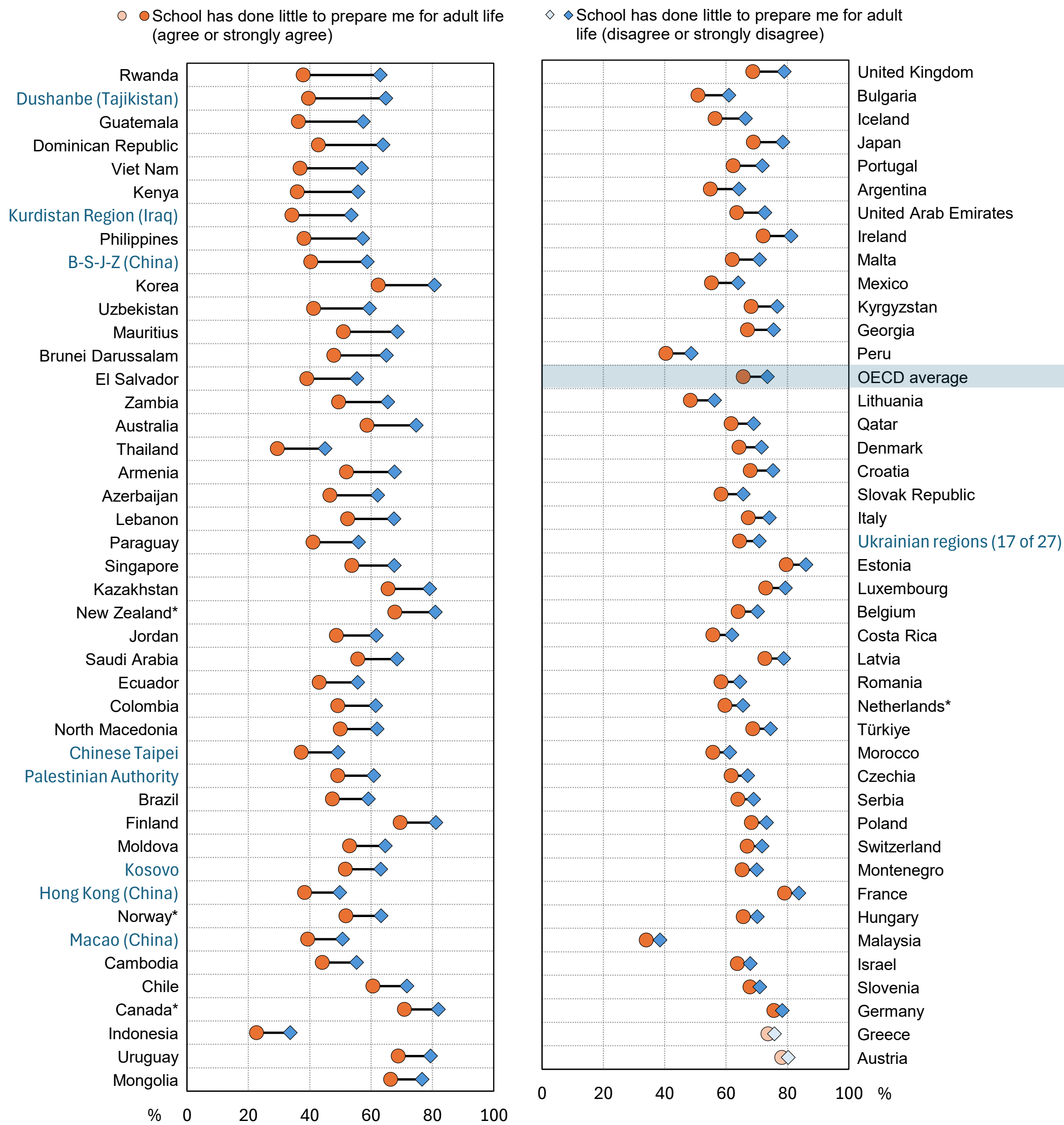
Percentage of students who disagree or strongly disagree with the statement "School has done little to prepare me for adult life when I leave school"



Notes: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the percentage of students who disagree or strongly disagree that school has done little to prepare them for adult life in PISA 2025.
Source: OECD, PISA 2025 Database, Table I.B1.3.71. See https://stat.link/143ud5 for the underlying data.

Figure I.3.29. Students with a growth mindset and who believe that school prepares them for adult life

Percentage of students who disagree or strongly disagree that “You have a certain amount of intelligence, and you really can’t do much to change it” among those who agreed or disagreed that school has done little to prepare them for adult life



Notes: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the difference in percentage of students who disagree or strongly disagree "You have a certain amount of intelligence, and you really can’t do much to change it" among those who agree or disagree that school has done little to prepare them for adult life.
Source: OECD, PISA 2025 Database, Table I.B1.3.20. See https://stat.link/143ud5 for the underlying data.

Students’ views of the value of school are also linked to growth mindset. On average across OECD countries and in most participating countries and economies, the share of students reporting a growth mindset is considerably lower among those who agree that school has done little to prepare them for adult life after they leave school than among those who disagree (Figure I.3.29). A similar pattern is observed for students who believe that school has been a waste of time: on average, the share of students reporting a growth mindset is 14 percentage points higher among those who disagree with this statement than among those who agree. (Table I.B1.3.20).

Interestingly, the relationship is much weaker with students' cognitive adaptability. For example, only in B-S-J-Z (China), Finland, Hong Kong (China), Kenya, Korea, Mongolia and New Zealand* students who report greater cognitive adaptability are more likely to believe that school has taught them things that could be useful in a job. In another 14 systems, the opposite is true and, in the majority, there is no relationship (Table I.B1.3.78). Students' views of school's usefulness are more closely related to certain attitudes related to effort and adaptability, like a growth mindset, but less so with overall adaptability.

The relationship with self-regulated help seeking is positive and consistent. On average and across countries and economies, students who report stronger help-seeking attitudes are more likely to report that school has taught them things that could be useful in a job, with the sole exception of the Dominican Republic, where the opposite is true (Table I.B1.3.78). Indeed, on average, 71% of students with high self-regulated learning attitudes report this belief, compared to about 58% of those with low self-regulated learning attitudes (Table I.B1.3.77).

Goal setting is also strongly aligned with this instrumental view of school. Among students who report stronger goal-setting attitudes, the share of those who consider that school has taught them things that could be useful in a job is considerably higher than among students who report less of this form of agency. The average gap is 15 percentage points and it is consistently observed across all participating countries and economies, with the sole exception of Indonesia (Table I.B1.3.77).

Overall, these findings suggest that students' views of the value of school are an important part of student engagement, complementing the earlier analysis of curiosity and perseverance. They are also closely linked to whether students sustain effort, hold more growth-oriented beliefs, and engage in more organised and self-regulated ways of learning. At the same time, these relationships are not uniform across all dimensions, and are notably weaker or less consistent for cognitive adaptability. Students' views of the value of school also vary considerably across systems, show uneven movement over time, and are not distributed equally across groups of students. This matters because students may continue to participate and meet school expectations without equally strong beliefs that school is worthwhile or worth investing in. The next section builds on this possibility by examining how academic functioning and motivational engagement do not always align in the same way across groups of students.

Box I.3.4. How do student attitudes towards schooling and learning change during adolescence?

Box I.2.2 in Chapter 2 presents the average yearly learning gains of 15-year-old students, and uses it as a benchmark to assess the magnitude of changes in PISA score points over time. A similar approach can be used to estimate the yearly changes, around the age of 15, in student engagement indicators.[1]

These estimates do not merely reflect the effects of schooling: as students grow older by one year, many other aspects of life can influence how they perceive themselves, how they approach learning, and how they respond to PISA questionnaires. As such, they provide an indication of the dimensions of engagement that change the most as 15-year-olds progress through school, accumulate experiences, and gain maturity; and of how these changes accompany the learning growth presented in Box I.2.2.

Overall, results show that older students, who have spent one more year in school, report higher levels of curiosity. In particular, students who are one year older more often agree or strongly agree that they like learning new things; and, conversely, more often disagree with the statement "I find learning new things to be boring". Although across systems, this intrinsic drive for learning grows with age, to a varying degree, some positive changes are observed in all seven countries and economies where they could be examined using this approach.

Results for student self-reported perseverance, although somewhat less consistent, also indicate that students' capacity to persevere increases as they grow older. For example, in England (United Kingdom), with one additional year of schooling and age, students become 7 percentage points more likely to report that they "keep working on tasks until they are finished", 4 percentage points more likely to report that they "apply additional effort if things become challenging", and 5 percentage points more likely to report that they "finish what [they] start". And in Ireland, the Netherlands*, Northern Ireland (United Kingdom) and Scotland (United Kingdom), older students are more likely to disagree with the statement "I give up easily". No significant difference related to student perseverance was found in Serbia or Brunei Darussalam.

Table I.3.3. Change in student attitudes, over one year of schooling and age, in eight countries and economies

Selected indicators

Country/economy	Effect of one year of schooling and age on…							
	Curiosity		Persistence		Attitudes towards school		Growth mindset	
	I like learning new things (agree or strongly agree) (% dif)		I give up easily (disagree or strongly disagree) (% dif)		School has been a waste of time (disagree or strongly disagree) (% dif)		You have a certain amount of intelligence, and you really can't do much to change it (disagree or strongly disagree) (% dif.)	
Brunei Darussalam	2.8	(2.4)	0.9	(2.3)	**5.1**	(2.2)	**7.0**	(2.3)
Ireland	2.9	(1.7)	**3.7**	(1.9)	2.4	(2.0)	2.9	(1.5)
Netherlands*	**8.3**	(2.3)	4.0	(2.3)	2.6	(2.4)	**4.8**	(1.9)
Serbia	**4.2**	(1.7)	0.1	(1.9)	-0.5	(1.8)	1.0	(1.7)
England (United Kingdom)	**8.7**	(2.3)	1.5	(2.1)	3.4	(2.1)	2.0	(2.2)
Northern Ireland (United Kingdom)	5.0	(3.0)	**6.3**	(3.1)	5.8	(3.0)	**7.1**	(3.3)
Scotland (United Kingdom)	**9.8**	(3.3)	**7.6**	(3.4)	4.1	(3.7)	**7.6**	(2.7)
United States*	m	m	m	m	0.4	(2.2)	0.3	(2.5)

Notes: Estimates are based on the methodology in Avvisati and Givord (2023[6]) and include controls for gender, socio-economic status and immigrant background. See notes under Table 2 in the original study for more details.
Values that are statistically significant are indicated in bold (see Annex A3).
The online version of this table includes results for all indicators of curiosity, persistence, and attitudes towards school.
Source: PISA 2018, 2022 and 2025 data.

Beyond these two core dimensions of student engagement, other attitudes towards learning also seem to improve around the age of 15. Estimates for growth mindset[2] show that an additional year of schooling and age is associated, in four out of eight countries/economies, with a significant increase in the share of students who disagree that one cannot do much to change his or her own intelligence. The exceptions are Ireland, England (United Kingdom), Serbia and the United States*, where the change is not statistically significant (in the latter case, this might reflect a ceiling effect, since most students already hold this belief) (see Table I.B1.3.17). The overall pattern is consistent with the curiosity results: both dimensions point to more favourable learning beliefs, especially those related to openness, development and self-improvement among older, more mature students.

By contrast, the evidence on the value of school is less conclusive. The share of students who believe that school has taught them things that could be useful in a job does not seem to grow, as students progress from one grade level to the next (all estimated changes are small and not statistically significant). Meanwhile, the share of students who hold negative opinions about school also does not diminish significantly, in most countries. Only in Brunei Darussalam and Northern Ireland (United Kingdom), there is a significant reduction (by 5 and 6 percentage points, respectively) in the share of students who believe that "School has been a waste of time".

Overall, these results suggest that the additional learning highlighted in Box I.2.2 is also accompanied by greater student engagement and more favourable attitudes towards learning. Interestingly, the weakest evidence for positive changes in attitudes is found for Serbia, where students also had the smallest learning gains. The strongest evidence of positive developments in attitudes concerns self-reported curiosity (seven out of seven countries/economies showing significant and positive results), followed by persistence (five out of seven countries/economies) and growth mindset (four out of eight countries/economies). The evidence is weaker for the perceived value of school. This distinction is important. It suggests that schooling today may be effectively supporting students' interest in learning and beliefs about improvement, while it may be less successful in strengthening their sense that school is useful, worthwhile or connected to future opportunities.

1. The estimates compare students across birth-month groups that are affected in opposite ways by later testing dates, due to the strict age-eligibility criteria applied in PISA. A first group of months corresponds to students who are older when testing is conducted later in the year; a second group corresponds to younger students. The coefficient of interest is the difference-in-differences estimator, defined as the change observed, between early and late-testing years, among students born in the first group of months, minus the change observed among students born in the second group of months.
2. Information about students' "growth mindset" was collected using slightly different formulations in 2018, 2022 and 2025 (the corresponding questions identifiers are ST263Q02JA, ST184Q01HA and ST420Q01DA). The estimates reported in this box are based on the assumption that the impact of this different framing is the same, regardless of a student's month of birth, and therefore cancels out in a difference-in-difference estimator.

Student academic compliance without engagement

The findings presented in this chapter suggest that, across education systems, some students may reach the baseline performance level, while not believing themselves to be strongly engaged in motivational terms. They may attend school and meet at least minimum academic expectations, yet report weaker curiosity, lower perseverance or less positive views about the value of school. Their attendance and participation in school may resemble compliance, understood here as meeting expectations without necessarily making a deeper personal investment in learning (Saeed and Zyngier, 2012[41]). This interpretation is consistent with the idea that school participation may be supported by motives that are not fully internalised (Deci and Ryan, 2000[5]), and that acceptable academic functioning does not necessarily coincide with strong interest in learning or with a strong sense that schoolwork is useful and worthwhile (Eccles and Wigfield, 2024[42]).

PISA data show that in general, academic performance, curiosity and perseverance go together (Tables I.B1.3.5 and I.B1.3.13), but these attitudes of engagement are not necessarily widespread, even among students who reached the baseline level of performance. For example, over one-third of students performing at baseline proficiency in science disagree or strongly disagree that they like learning new things, and almost half do so about applying additional effort when work becomes challenging. In several systems, the share of such students reporting these dimensions of curiosity or perseverance are half or less. This is particularly relevant considering that in science, the average student in OECD countries performs at the upper end of such baseline proficiency (482 score points on average, which is within the Level 2 range of 410 to 484 score points).

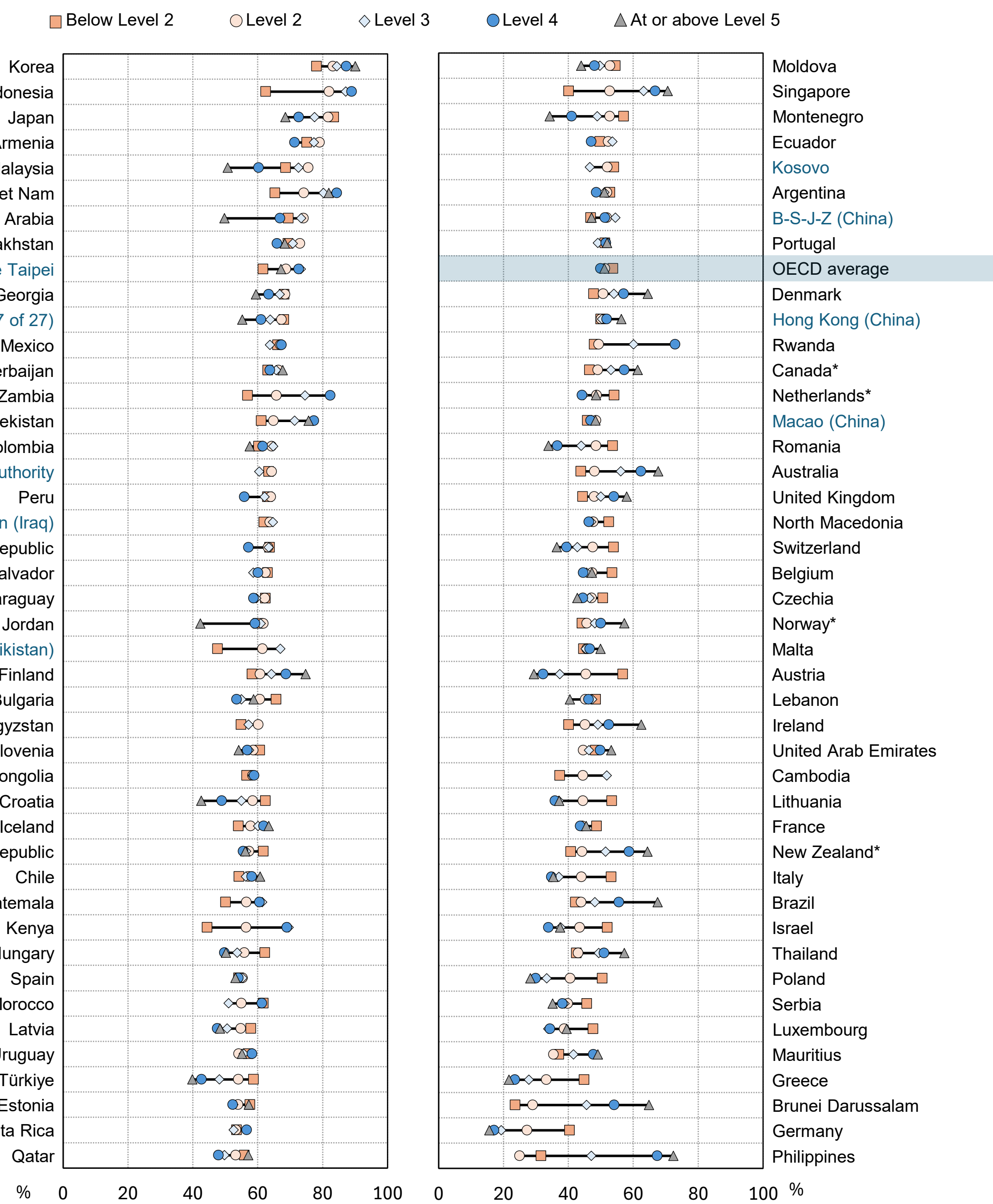
When it comes to students' perceived value of school, its relationship with performance is less clear. For example, as shown in Figure I.3.30, the share of students who believe that what school has taught can be useful for adult life after school is often similar across proficiency levels and in many countries and economies even reversed. On average across OECD countries, about half of students report this positive belief about school, independently of where they stand in the proficiency scale (Table I.B1.3.75).

In other words, not all students reaching baseline proficiency level report motivational engagement. Performance alone may therefore give an incomplete picture of how students relate to learning and school. This is particularly important in light of the declines observed between 2022 and 2025 in some indicators of students' curiosity and perseverance, as well as the average declines in reading and mathematics performance reported in Chapter 2.

For example, higher curiosity does not automatically coincide with a stronger sense of school's practical value. Students are more likely to perceive schooling as valuable when they are less curious rather than more curious on average across OECD countries and in about half of countries and economies. The opposite is observed only in seven countries and economies (Figure I.3.31 and Table I.B1.3.76).

Figure I.3.30. Percentage of students who believe that school prepares them for adult life, by proficiency level in science

Percentage of students who disagree or strongly disagree that “School has done little to prepare me for adult life when I leave school”, by proficiency level in science



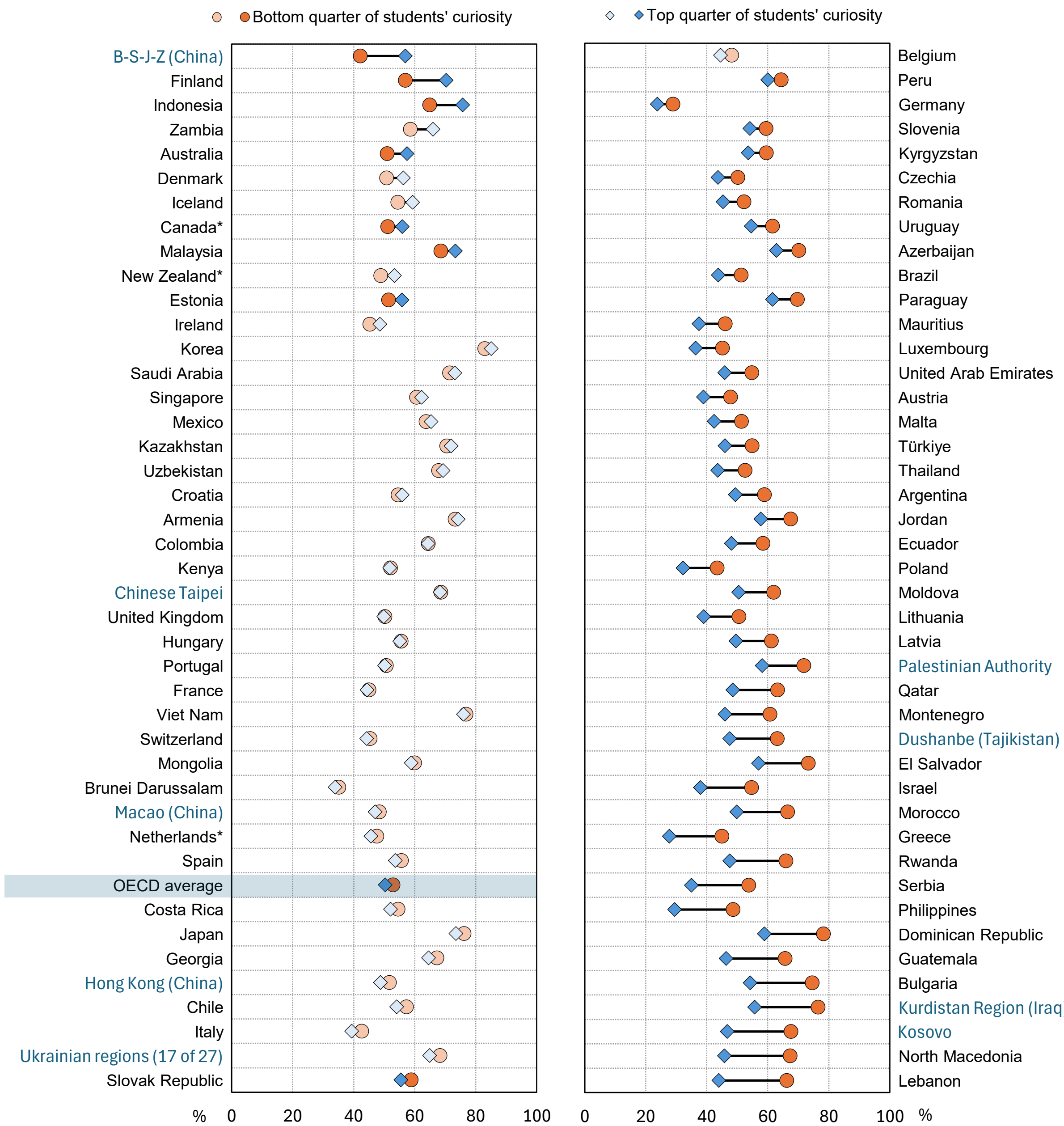
Note: Only countries and economies with available data are shown.

Countries and economies are ranked in descending order of the percentage of students who disagree or strongly disagree that “School has done little to prepare me for adult life when I leave school” at proficiency Level 2 in science.

Source: OECD, PISA 2025 Database, Table I.B1.3.75. See https://stat.link/143ud5 for the underlying data.

Figure I.3.31. Students who believe that school prepares them for adult life, by level of students' curiosity

Percentage of students who disagree or strongly disagree that "School has done little to prepare me for adult life when I leave school", by quarter of the index of students' curiosity



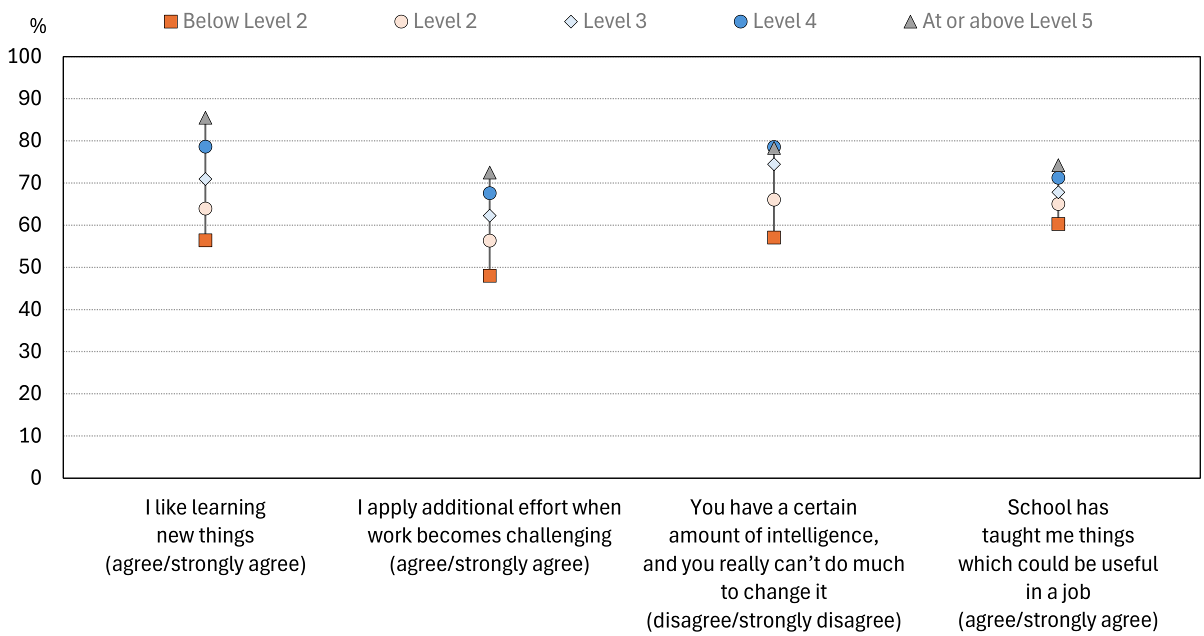
Note: Only countries and economies with available data are shown.
Statistically significant differences are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the difference in percentage of students who believe school has done little to prepare them for adult life between those who are the most and the least curious.
Source: OECD, PISA 2025 Database, Table I.B1.3.76. See https://stat.link/143ud5 for the underlying data.

However, this kind of mismatch is not observed between the value of school and perseverance. Students who disagree that school has done little to prepare them for adult life when they leave school tend also to be those who report higher perseverance (Table I.B1.3.76). It is possible that perseverance may be sustained more readily than curiosity where students see effort as serving goals, expectations or future benefits: the practical value of school may not always spark curiosity, but it may still help sustain effort.

Student academic compliance without engagement is most visible among students who perform at the proficiency baseline Level 2. However, PISA 2025 data show that this may also apply to a non-negligible share of students performing at Level 3, as shown in Figure I.3.32. On average across OECD countries, about 36% of students performing at Level 2 report disagreeing they like to learn new things, and 29% of those performing at Level 3 do so (Table I.B1.3.5). Similarly, about 44% of students performing at Level 2 report disagreeing they apply additional effort when work becomes challenging, and 38% among those performing at Level 3 do (Table I.B1.3.13).

Figure I.3.32. Dimensions of engagement, by proficiency level in science

Percentage of students reporting curiosity, persistence, growth mindset and usefulness of school for a job, by proficiency level in science; OECD average



Source: OECD, PISA 2025 Database, Tables I.B1.3.5, I.B1.3.13, I.B1.3.19 and I.B1.3.75. See https://stat.link/143ud5 for the underlying data.

Moreover, on average across OECD countries, about 35% of students performing at Level 2 in science report that they do not believe that school has taught them things that could be useful in a job, and about 32% of those performing at Level 3 do so (Table I.B1.3.75). Likewise, about 27% of students performing at the baseline Level 2 in science report that school has been a waste of time, compared with about 21% of those performing at Level 3 (Table I.B1.3.75). Almost half of students performing at the baseline Level 2 (49%) report that school has done little to prepare them for adult life when they leave school, as do about half of those performing at Level 3 (50%) (Table I.B1.3.75).

These results do not imply that the same students report all of these attitudes at once. Rather, they indicate that an important share of students who reach at least baseline levels of performance do so without strongly expressing the attitudes that may help sustain engagement more broadly. In this sense, academic compliance can be understood as participation that is sufficiently effective to meet school expectations, but not necessarily accompanied by a correspondingly strong investment in learning itself. For some students, acceptable performance may coexist with weaker curiosity; for others, it may coexist with less positive views about the usefulness of school, even where perseverance or other motivations remain more intact.

A multidimensional perspective is therefore particularly relevant in light of the performance trends discussed in Chapter 2. Between 2022 and 2025, performance declined across the performance distribution in reading and mathematics, and while it remained stable for science, the performance gap has widened and the mean scores of the lowest-performing students are the lowest reported so far by PISA. In this context, students whose scores remain around the average, or who continue to meet baseline proficiency expectations, may still appear academically compliant when assessed on performance alone, even when they do not report interest in learning, sense of purpose and willingness to persist. Such students sit at the limit where the loss of academic competencies can quickly deteriorate their future perspectives. This is what makes the notion of compliance analytically useful in this chapter: it highlights a possible gap between observable academic functioning and the motivational conditions that help sustain engagement over time, particularly among students who are at most academic risk.

Student engagement with learning and performance in science

The analyses developed in this chapter have treated students' motivation, beliefs, agency and sense of belonging as outcomes of schooling in their own right, not simply as instruments for improving academic results. To complete the picture, the final section examines the extent to which these dimensions of engagement are also associated with science performance in PISA.

Across many systems, the different dimensions of engagement discussed in this chapter are positively associated with science performance, but not all in the same way or with the same consistency. As shown in Table I.3.1, some, such as curiosity and students' beliefs about the nature of science, show clearer and more direct alignment with stronger academic outcomes, while others, such as goal setting, display more differentiated or item-specific patterns. The dimensions of agency are also important because some of them strengthen the extent to which motivation and perseverance are associated with performance. More broadly, these patterns suggest that stronger academic outcomes and stronger engagement often go together, although average levels of engagement and the strength of their relationship with performance vary across education systems.

Motivation, curiosity and perseverance and science performance

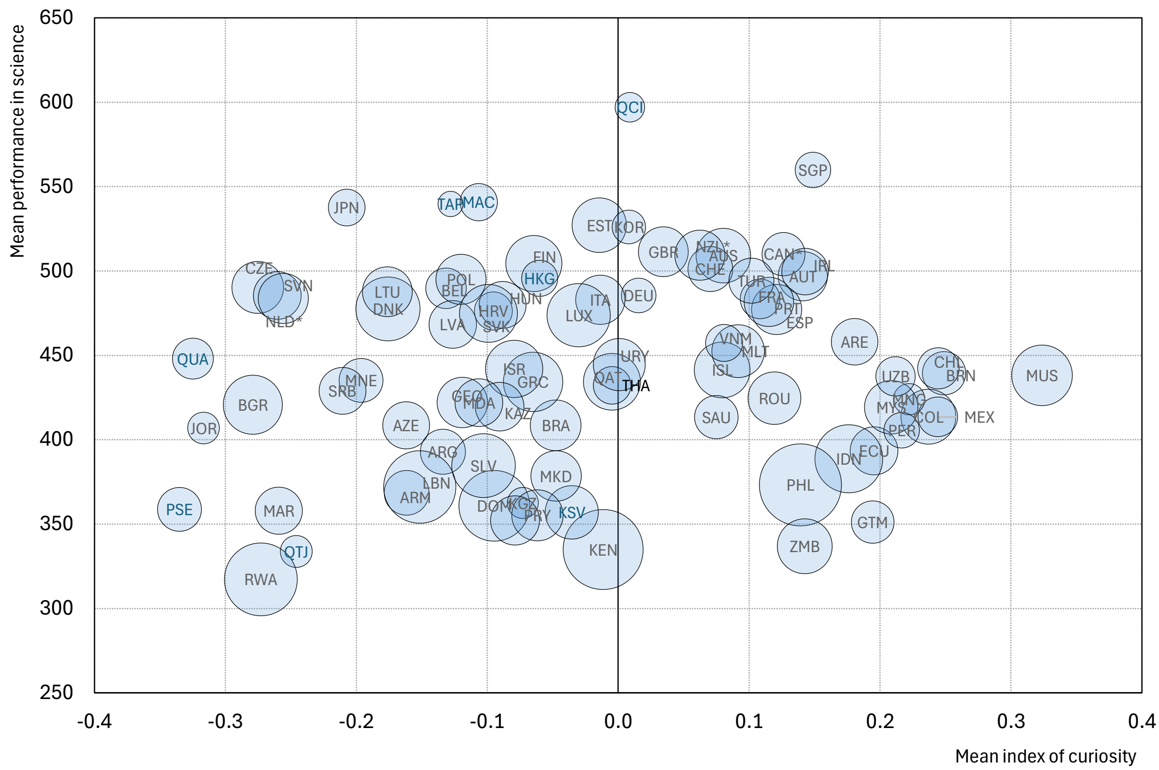
PISA 2025 data show that curiosity to learn is positively related to science performance, after accounting for students' and schools' socio-economic profile. This positive association is observed in all participating countries and economies in PISA 2025 with available data. Its strength, however, varies across systems. Countries and economies with the highest average levels of curiosity are not necessarily those where curiosity is most strongly associated with science performance (Table I.B1.3.4).

Conversely, in countries and economies where the association between curiosity and performance is strongest, students' reported curiosity often lies closer to the OECD average, as in Australia, Iceland, the Philippines and Qatar, or below it, as in the Dominican Republic, Kenya, Lebanon, Luxembourg and Rwanda. This suggests that the relationship between students' drive to learn and academic outcomes depends not only on to what extent students report being curious, but also on the extent to which that curiosity is channelled into academically relevant forms of engagement within each education system (Tables I.B1.3.1 and I.B1.3.4).

A useful complement to this picture is to examine the relationship between perseverance and academic performance. This provides an indication of how closely sustained effort and academic outcomes are aligned across students. PISA 2025 data show that students with higher levels of perseverance tend to outperform those with lower levels. This positive association is observed in all participating countries and economies in PISA 2025 with available data, with the sole exceptions of B-S-J-Z (China) and Chinese Taipei (Table I.B1.3.12).

Figure I.3.33. Relationship between curiosity and science performance

Relationship between mean performance in science and the index of students' curiosity, and strength of the association (R-squared)

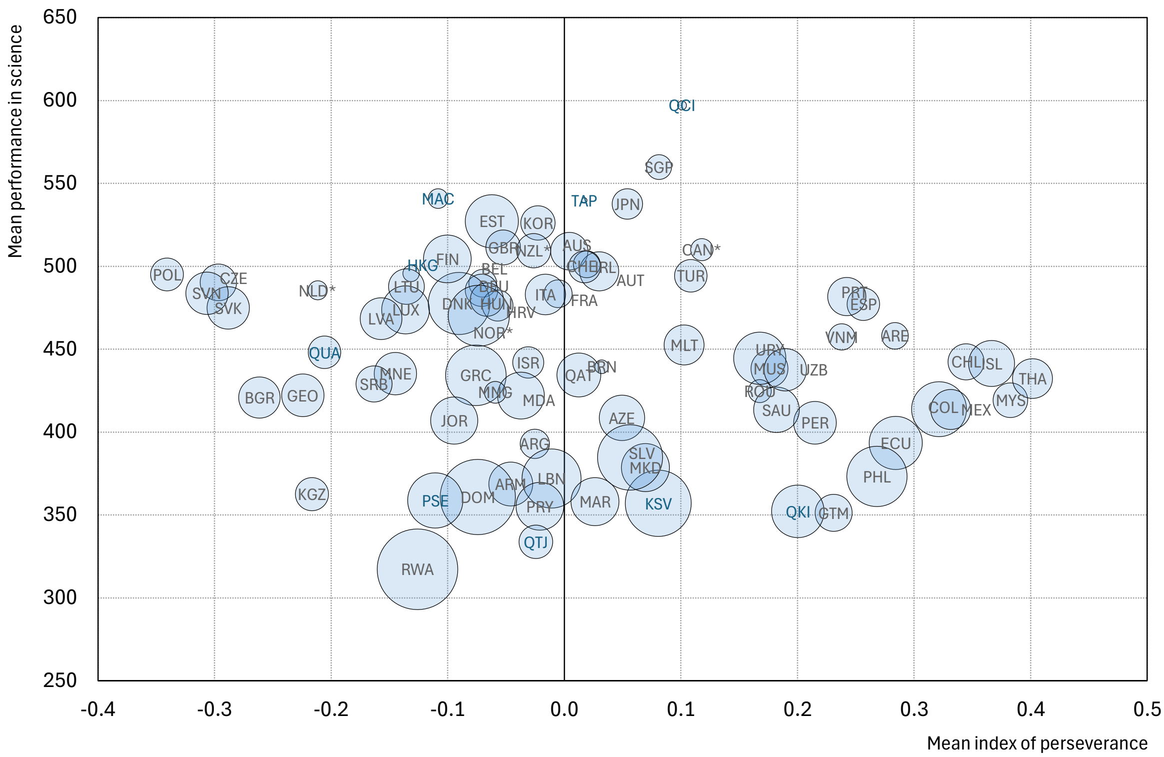


Note: Only countries and economies with available data are shown. Please refer to the Reader's Guide for countries' and economies' ISO codes.
The explained variance in science performance (r-squared x 100) is represented by the size of the bubble.
Source: OECD, PISA 2025 Database, Tables I.B1.2a.1, I.B1.3.1 and I.B1.3.4. See https://stat.link/143ud5 for the underlying data.

As with curiosity, however, the strength of this association varies across education systems. Countries and economies with the highest average levels of perseverance are not necessarily those where perseverance is most strongly associated with science performance. In many of the countries and economies where perseverance is most strongly associated with performance, however, average perseverance remains below the OECD average, as in Denmark, the Dominican Republic, Greece, Norway* and Rwanda(Tables I.B1.3.9 and I.B1.3.12). This suggests that stronger association between perseverance and performance does not necessarily coincide with higher average levels of perseverance. Rather, it may indicate that in some systems, perseverance is less widely shared but more strongly differentiates performance across students. More broadly, the pattern suggests that average levels of engagement and the extent to which engagement is linked to academic performance should be considered separately, as the two do not necessarily correlate.

Figure I.3.34. Relationship between perseverance and science performance

Relationship between mean performance in science and the index of students' perseverance, and strength of the association (R-squared)



Note: Only countries and economies with available data are shown. Please refer to the Reader's Guide for countries' and economies' ISO codes.
The explained variance in science performance (r-squared x 100) is represented by the size of the bubble.
Source: OECD, PISA 2025 Database, Tables I.B1.2a.1, I.B1.3.9 and I.B1.3.12. See https://stat.link/143ud5 for the underlying data.

Growth mindset, epistemic beliefs and cognitive adaptability and science performance

As in previous PISA cycles, reporting a growth mindset is positively associated with academic performance. PISA 2025 data show that students reporting a growth mindset score, on average, 28 points higher in science than students who do not report this belief, after accounting for students' and schools' socio-economic profile (Table I.B1.3.18).

However, previous PISA analyses have shown that the score gaps associated with growth mindset are not uniform across proficiency levels: students who scored at proficiency Level 2, 3 or 4 (i.e. mid-performers) show the largest and most consistent gaps with respect to low and top performers (OECD, 2025[25]) .[10]

Moreover, students who hold more developed beliefs about the nature of science also tend to show stronger academic outcomes. PISA data show that science performance tends to be stronger where students show greater recognition that scientific knowledge is evidence-based, testable and open to scrutiny. This positive relationship is observed consistently across all countries/economies participating in PISA 2025 (Table I.B1.3.33). Likewise, the association with performance in science is similar when looking at students' responses to the question on whether one should rely more on common sense and less on scientific studies. Among all participating countries/economies with available information, there is a positive association between students' disagreement with this statement and performance in science (Table I.B1.3.33).

Cognitive adaptability also shows a positive average relationship with science performance, although moderate (Table I.B1.3.43).

Student agency and science performance

The dimensions of student agency examined in this chapter – self-regulated help seeking and goal setting – are related to academic performance, but not in the same way.

Self-regulated help seeking is associated with science performance in a majority of countries and economies, after accounting for students' and schools' socio-economic profile (63 out of 82) (Table I.B1.3.46). This dimension of agency also matters because it strengthens the relationship between important aspects of engagement and academic performance. For example, the positive relationship between students’ liking to learn new things and their science performance is stronger among students who report high self-regulated help seeking than among those who report low self-regulation, by 13 score points on average and in 42 countries and economies; in no system is the opposite true (Table I.B1.3.47).

This suggests that agency matters not only because it is directly associated with performance, but also because curiosity is more closely aligned with stronger academic outcomes where students are better able to seek support.

Goal setting presents a more mixed picture. On average across the OECD, and in two-thirds of systems, goal setting is positively, but weakly, related to science performance. However, in 27 countries and economies, there is no relationship with performance in science, and in Czechia, Estonia, Italy and Latvia, the relationship is negative (Table I.B1.3.51). This weaker and less consistent pattern reflects the fact that the questions measuring goal setting do not all carry the same meaning. For example, in countries where the relationship is negative, there is a strong negative association between performance in science and “students often making a summary of the most important points without using their documents in order to identify knowledge gaps”. By contrast, in three of these four countries, there is a positive association between science performance and “often asking oneself questions about study materials in order to check understanding” (Table I.B1.3.51).

It is possible that in a number of systems, low-performing students are encouraged to use specific techniques to verify their understanding and learning needs, such as making summaries of the most important points without using reference documents. This suggests that goal setting may not be best understood as a single marker of stronger engagement, but as a set of practices whose meaning depends partly on how and why they are used. Some may be more common among higher-performing students because they reflect a proactive and structured way of managing learning. Others may be more visible among lower-performing students because they are used in a more compensatory way to check understanding, identify gaps or revise strategies more frequently.

Sense of belonging at school and students’ views regarding the value of school and science performance

Students’ sense of belonging at school and their views of the value of school are both positively associated with science performance, but not in the same way. The index of sense of belonging at school is moderately but positively associated with science performance, on average and in most countries and economies (46), after accounting for students’ and schools’ socio-economic background (Table I.B1.3.66). However, there is no relationship in 31 systems, and the association is negative in Finland, Italy, the Netherlands*, Norway* and Chinese Taipei.

Students’ views of the value of school are also positively associated with science performance. In line with earlier analyses using PISA data (OECD, 2024[43]), students who believe that school has taught them things which could be useful in a job tend to outperform those who believe the opposite in all participating countries and economies, with the sole exceptions of Germany, Hong Kong (China), Kyrgyzstan, Macao (China), Chinese Taipei and Türkiye (Table I.B1.3.74). Similarly, students who do not believe that school has been a waste of time tend to outperform those who do in science, on average across OECD countries. This pattern is observed in all participating countries and economies in PISA 2025, with the sole exception of Türkiye, after accounting for students' and schools' socio-economic profile (Table I.B1.3.74).

These relationships suggest that students' experience of school matters for academic performance not only in terms of whether they feel that they belong, but also whether they see school as worthwhile and relevant. At the same time, the two dimensions do not operate identically. Together with the earlier analyses of curiosity, perseverance and agency, these findings help shift attention from students' internal orientations alone to the extent to which school is experienced as both socially meaningful and worth investing in.

Table I.3.4. Summary of findings across the dimensions of student engagement

Main descriptive patterns of the student engagement dimensions analysed in this chapter

Analytical level	Dimension	What it captures	Main descriptive pattern (including trends, where available)	Relationships with other dimensions	Relationship with science performance	Main contextual nuance
I. Drive to learn	**Curiosity**	Students' openness to new ideas and interest in learning and discovery.	Curiosity is widely reported across systems. Between 2022 and 2025, the share of students who report feeling more curious than most people they know increased on average, while boredom-related responses deteriorated.	Usually aligns positively with perseverance, growth mindset, beliefs about the nature of science and student agency, although not uniformly across systems.	Positively associated with science performance in all participating systems with available data, but the strength of the relationship varies markedly across education systems: the association is not strongest where average curiosity is highest.	High average levels do not necessarily coincide with a steeper performance gradient, suggesting that how curiosity is channelled within systems matters as much as how often it is reported.
I. Drive to learn	**Perseverance**	Students' reported willingness to sustain effort and continue working when schoolwork becomes difficult or uninteresting.	Perseverance is unevenly distributed and several indicators deteriorated between 2022 and 2025. At the same time, the shares reporting that they give up easily or stop when homework is too time-consuming increased across many systems.	Often aligns positively with curiosity, growth mindset, belonging and resilience and agency dimensions, though not in the same way everywhere.	Positively associated with science performance on average and in most systems, but the association is not strongest where average perseverance is highest.	The results suggest that perseverance should not be treated as a personal virtue in isolation, but as one behavioural dimension of engagement that depends on how learning is experienced and supported.
II. Learning-related beliefs, behaviours and agency	**Growth mindset**	Students' reported belief that abilities can be developed through effort, challenge, feedback and support.	Growth mindset is widely reported, with clear differences by socio-economic profile and smaller differences by gender.	Usually aligns positively with curiosity and perseverance, although such relationships may be moderated by academic performance. It is also related to more positive views of school, belonging and proactive attitudes like help seeking.	Positively associated with science performance in most systems, although the relationship is not uniform across the performance distribution and may weaken in some linked analyses once performance is considered.	Growth mindset is not a fixed student characteristic but an approach to learning through which some forms of agency may be oriented, supported or constrained.

Analytical level	Dimension	What it captures	Main descriptive pattern (including trends, where available)	Relationships with other dimensions	Relationship with science performance	Main contextual nuance
II. Learning-related beliefs, behaviours and agency	**Beliefs about the nature of science (epistemic beliefs)**	Students' understanding of scientific knowledge as evidence-based, testable, revisable and open to scrutiny.	These beliefs are widely endorsed across systems.	Positively related to curiosity, perseverance and growth mindset across many contexts, indicating broad alignment between how students understand knowledge and how they engage with learning. These relationships could be moderated by academic performance in several systems.	Strongly and positively associated with science performance across participating systems; disagreement with privileging common sense over scientific studies is also linked to higher performance.	This dimension matters because it captures how students position themselves in relation to knowledge itself, not only how they feel about learning or effort.
II. Learning-related beliefs, behaviours and agency	**Cognitive adaptability**	Students' reported capacity to adjust to unfamiliar, demanding or stressful situations and to respond flexibly to change.	Levels of cognitive adaptability vary substantially across systems and by socio-economic profile.	Generally aligns with curiosity, perseverance and growth mindset; links with instrumental motivation and beliefs about the nature of science are weaker or less consistent.	Positively associated with science performance on average and in most systems, although the strength of the relationship varies and is negative in one system.	Adaptability appears to capture a practical, challenge-oriented form of agency, more closely connected to how students manage difficulty than to how they think about knowledge itself.
II. Learning-related beliefs, behaviours and agency	**Self-regulated help seeking**	Students' readiness to seek support, feedback or guidance when needed, including after first trying to solve a problem independently.	Help seeking and support-seeking attitudes are widely reported across systems.	Positively aligned with curiosity, perseverance, growth mindset and beliefs about the nature of science; it is also linked to more positive views of school and belonging.	Positively associated with science performance on average and across most systems; some individual support-seeking attitudes show stronger performance differences than the composite index.	The results support the interpretation of help seeking as an expression of agency rather than dependence, while also underscoring the need for environments in which support is available and meaningful.
II. Learning-related beliefs, behaviours and agency	**Self-regulated Goal setting**	Students' planning, self-monitoring and study-adjustment practices, including checking, understanding and revising strategies.	Goal-setting practices are reported by a minority to about half of students, depending on the practice and the system.	Closely aligned with curiosity and perseverance, and positively moderated by teacher support; its relationship with growth mindset is mixed and depends on the specific practice examined.	The goal-setting index is positively associated with science performance on average and in most systems, but the pattern is mixed, with item-level differences and negative relationships in some systems.	The mixed pattern suggests that goal setting is not a single, uniform form of agency: some practices appear more proactive, while others may be used in more compensatory ways.
III. Conditions of learning	**Sense of belonging at school**	Whether students feel accepted, included, socially connected and generally at ease within the school environment.	A large majority of students report positive belonging-related attitudes, although variation across systems and clear differences by gender and socio-economic profile remain.	Positively related to curiosity and perseverance, and these relationships could be moderated by teacher support. Also positively related to growth mindset and the resilience and agency dimensions examined in the chapter.	Moderately but positively associated with science performance on average and in many systems, with some strong item-level relationships for feeling that one belongs and not feeling like an outsider.	Belonging functions as a corrective to overly individualised interpretations of engagement by shifting attention to the relational and emotional conditions that make sustained engagement more possible.

Analytical level	Dimension	What it captures	Main descriptive pattern (including trends, where available)	Relationships with other dimensions	Relationship with science performance	Main contextual nuance
III. Conditions of learning	**Instrumental motivation/ perceived value of school**	Students' belief that school is useful, worthwhile and relevant to adult life or future work.	Views of school's usefulness are mixed across systems. Between 2022 and 2025, negative views declined in many systems for some items, but sizeable shares of students still report that school has done little to prepare them for adult life or has been a waste of time.	Aligns positively with perseverance, belonging, growth mindset and forms of agency, but is less tightly aligned with curiosity and cognitive adaptability.	Students who see school as useful tend to outperform those who do not, although these relationships vary in strength across systems.	This dimension highlights whether school is experienced as worth the effort, not simply whether students are interested in learning.
III. Conditions of learning	**Teacher support (contextual moderator)**	Students' perception that teachers are interested, helpful, responsive and open to students' views in the classroom.	Teacher support is analysed mainly as a contextual moderator rather than as a stand-alone outcome.	Strengthens the relationship between belonging and both curiosity and perseverance, and strengthens the alignment between curiosity and goal setting.		Teacher support is important because it shows that agency and belonging are not individual student attitudes, but are supported or constrained by the learning environment.

Table I.3.5. PISA 2025 figures and tables in Chapter 3

Figure I.3.23		Cognitive activation in science classes and students' attitudes toward learning and science
Figure I.3.24		Students' sense of belonging, by gender
Figure I.3.25		Students who believe school has taught them things useful in a job, by level of students' sense of belonging
Figure I.3.26		Students who apply additional effort when work becomes challenging, by level of students' sense of belonging
Figure I.3.27		Relationship between students' curiosity and sense of belonging, by level of teacher support
Figure I.3.28		Change in students who disagree that school has done little to prepare them for adult life between PISA 2022 and PISA 2025
Figure I.3.29		Students with a growth mindset and who believe that school prepares them for adult life
Table I.3.3		Change in student attitudes, over one year of schooling and age, in 8 countries and economies
Figure I.3.30		Percentage of students who believe that school prepares them for adult life, by proficiency level in science
Figure I.3.31		Students who believe that school prepares them for adult life, by level of students' curiosity
Figure I.3.32		Dimensions of engagement, by proficiency level in science
Figure I.3.33		Relationship between curiosity and science performance
Figure I.3.34		Relationship between perseverance and science performance
Figure I.3.o1	WEB	Students' epistemic profiles
Figure I.3.o2	WEB	Students who can handle unusual situations
Figure I.3.o3	WEB	Students who can adapt to different situations even when under stress or pressure
Figure I.3.o4	WEB	Students who ask classmates when they do not fully understand
Figure I.3.o5	WEB	Students who ask teachers for help
Figure I.3.o6	WEB	Students who plan their approach to studying
Figure I.3.o7	WEB	Students who check that they understand everything
Figure I.3.o8	WEB	Students who feel they belong at school
Figure I.3.o9	WEB	Students who don't feel lonely at school

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Notes

[1] In addition, students' reports are susceptible to several possible measurement errors: memory decay, social desirability, reference-group bias, and response-style bias. These biases may operate differently in different cultural contexts.

[2] In PISA 2025, these questions together form the PISA index of student perseverance.

[3] In order to measure growth mindset in PISA 2025, students were asked to indicate whether they agreed or disagreed ("strongly disagree", "disagree", "agree", or "strongly agree") with the following statement: "You have a certain amount of intelligence, and you really can't do much to change it." Given the intention to analyse the opposite ends of a continuum of beliefs rather than several possible categories, the analyses in this report group student responses into two categories: those who disagree or strongly disagree (i.e. those with a growth mindset), and those who agree and strongly agree (i.e. those with a fixed mindset).
Students who disagreed with the statement are considered to have a stronger growth mindset than students who agreed with the statement. Previous research has demonstrated the validity of single-item measures such as the single-item self-esteem scale (Robins et al., 2001[44]), the single-item ability ratings (Rammstedt and Rammsayer, 2002[45]), or the abbreviated 10-item measure of the Big Five (Rammstedt and John, 2007[46]). However, since PISA 2018, when growth mindset was first measured, some concerns have emerged regarding the capacity of this single item to measure growth mindset accurately. This has been mostly due to i) the response format of the item which may influence student response (an "agreement question" rather than a "construct-specific" format), and ii) the item's cognitively demanding formulation may reduce precision in measurement, as students had to disagree with a negative statement to report having a growth mindset.
This method of measuring growth mindset potentially suffers from: i) acquiescent bias, or the tendency to agree with

questions regardless of content (e.g. an “agreement question” rather than a “construct-specific” format may influence student response); and ii) measurement error, as the cognitive load required by the question increases the likelihood of a random response.
These elements can attenuate or magnify the correlations presented in this report. As a consequence, the results presented in this report should be interpreted with caution.
[4] All of these parental attitudes are reported from the students’ perspective. When considering parents’ own reports, the same misalignment with academically-oriented forms of support remains. In only 5 out of 17 countries and economies with available data from the PISA 2025 parent questionnaire is academically-oriented parental feedback more frequent among students who report a growth mindset, after accounting for gender, student and school socio-economic profile (Table I.B1.3.26). In most systems, there is no clear relationship between students’ self-reports of a growth mindset and parents’ reports of providing academically oriented feedback. For example, in 11 systems, students’ reports of a growth mindset are not statistically significantly related to parents’ reports that they tell their children that they worked hard when they do well in school, or that they tell them how smart they are if they do well (Table I.B1.3.24).

[5] The PISA index of students' beliefs about the nature of science is based on students’ ratings of their agreement with statements about a range of beliefs, including “good answers are based on evidence from many different experiments”, “one important part of broad science is doing experiments to come up with ideas about how things work”, “information from one source should be checked from a range of other reliable sources before it is accepted”, “there are some questions that scientists cannot answer” and “new discoveries can change what scientists think is true”. Each of the items included four response options (“strongly disagree”, “disagree”, “agree”, or “strongly agree”).

[6] These questions together form the PISA index of cognitive adaptability.

[7] These questions together form the PISA index of self-regulated learning.

[8] These questions together form the PISA index of goal setting.

[9] These questions together form the PISA index of cognitive activation in science classes

[10] Standardised effect sizes in mathematics performance associated with an increase by one standard deviation in growth mindset, 0.04 for low performers, 0.17 for mid- performers, and with no association for top performers.

4 Student school life and beyond

This chapter analyses different aspects that can impact student achievement and attitudes towards learning, both inside and outside of school. These include school resources, students' relationships with teachers and families, and school climate, as reported in PISA 2025. School resources mainly focus on digital resources and student use of AI for schoolwork, while human, material and time-related resources available for learning are also covered. Relationships with teachers and families are analysed through support from teachers, parents or guardians for student learning, and the involvement of parents or guardians in school activities. School climate is examined through three key dimensions: disciplinary climate, bullying and cyberbullying, and school attendance and truancy. The chapter also explores changes over time in these dimensions of school and home life, where trend data are available, and their associations with student performance and attitudes towards learning.

What the data tell us

School resources

- PISA 2025 data shed light on how students' learning outcomes are related to school resources, policies and practices, including the use of digital devices and tools such as artificial intelligence (AI) chatbots, and homework supports.

Digital resources

- School principals' concerns about the shortage of digital resources slightly decreased compared to 2022, on average across OECD countries, consistent with the continued increase in computer availability observed in 31 education systems with available data.
- Using digital devices to enhance teaching and learning continues to be a challenge, as principals in OECD countries reported lower levels of preparedness for digital learning than in 2022. This partially reverses the improvements observed between 2018 and 2022.

Student use of digital tools

- Time spent using digital devices both inside and out of school has slightly declined since 2022. On average across OECD countries, students reported spending 1.7 hours per day using digital devices at school for learning activities and 1.1 hours per day for leisure while at school.
- Moderate use of digital devices for learning at school is associated with higher science performance than both no use and very high use, on average across OECD countries. However, use for leisure at school for longer than one hour per day is consistently associated with lower science performance.
- Using digital devices during lesson time can distract students from learning without appropriate management. On average across OECD countries, 28% of students reported that their peers are distracted by the use of digital devices during most or every science lesson. In B-S-J-Z (China), Japan and Korea, fewer than 10% of students reported such distraction. Students who reported using digital devices more frequently in their lessons are more likely to report digital distraction in their lessons.
- Schools implementing cell phone bans or subject-specific guidelines on the use of digital devices in school tend to show lower levels of distraction by digital devices in science lessons and less time spent on digital devices for leisure at school. However, the relationship between these policies and science performance is unclear: students enrolled in schools with such policies tend to have similar or lower scores in science than their peers in most countries and economies.
- The use of AI for schoolwork is widespread in most countries and economies, but regular use (i.e. almost daily) was reported by only one out of five students on average across OECD countries.
- The relationship of AI use with science performance is complex: non-users of AI chatbots for specific schoolwork tasks outperform their peers in most countries and economies. AI use for a more general purpose, to help students learn, shows a slightly different pattern, with weekly users performing at a similar level to non-users on average across OECD countries.
- Schools can help students use AI more critically, but such learning opportunities are not equally distributed. Students who frequently use AI for learning and who learn to assess the quality of AI-generated information at school achieve slightly higher science performance than non- or infrequent users. However, such learning opportunities are reported more frequently by socio-economically advantaged students, raising concerns about a possible new divide in access to critical engagement with AI.

Human and material resources

- Improvements in teacher shortages and student-to-teacher ratios have been reported by school principals compared to 2022 on average across OECD countries. However, teacher shortages remain a challenge, with school principals reporting higher concern than in 2018 in most countries and economies.
- In contrast, school principals report higher concern about material shortages and shortages of assisting staff. This partly offsets improvements in material shortages reported between 2018 and 2022.

Homework and study help

- Students in 2025 report spending around 1.4 hours per day on their homework, on average across OECD countries, marking a 11% relative decline compared to 2022. While the relationship between homework and science performance is not linear, more time spent on homework is associated with higher levels of curiosity, perseverance and goal setting.
- The provision of study help, such as providing students access to a space to complete homework and peer-to-peer tutoring are associated with higher science performance on average across OECD countries.

Relationships with teachers and families

- Students reported that they receive more teacher support in science lessons compared to 2015 in about half of countries/economies with available data. Teacher support remains consistently positively associated with science performance and attitudes towards learning in most education systems.
- Students reported less family support compared to 2022 in almost all countries and economies with available data. This declining trend is particularly observed among boys and disadvantaged students. Family support improved nonetheless in Estonia, Poland, Viet Nam and Iceland.
- Consistent positive relationships between family support and students' science performance appear driven by parents' or guardians' interest in students' day-to-day learning.

School climate

- Disciplinary climate in science lessons also improved between 2015 and 2025, on average across OECD countries and in 37 countries/economies. Countries and economies with an improved disciplinary climate tend to show stability or an increase in their average science performance compared to 2015.
- Across OECD countries and in most participating education systems, bullying is associated with lower student performance and sense of belonging even after accounting for students' and schools' socio-economic profile. Cyberbullying is relatively rare (3% of students, on average across OECD countries) but is linked to the largest performance gaps: victims scored 59 points lower in science than their peers on average and 48 points lower after accounting for socio-economic profile.
- Students reported slightly more truancy and lateness, on average across OECD countries, compared to 2018 (+0.6 percentage point in whole-day school skipping, +2 percentage points in lateness), reverting the positive trends observed in 2022. Both truancy and lateness continue to be substantially negatively associated with science performance and attitudes towards learning.

Introduction

Student achievement and attitudes towards learning are shaped by many factors, including family and personal background, as well as the resources available in schools and the quality of learning environments. Learning does not happen in a vacuum, which is why it is essential to examine factors within students' school and home lives.

Adequate resources are a necessary condition for high-quality instruction, while supportive families and teachers, and an orderly and well-organised school climate help students make the most of these resources. Conversely, shortages of key resources, lack of supportive relationships with teachers and families or unfavourable learning conditions with high levels of bullying and truancy can constrain schools' capacity to support student learning and exacerbate existing inequalities.

This chapter reviews the resources available to schools in 2025, based on responses from students and school principals to the PISA 2025 questionnaires, focusing on digital, human, material and time-related resources. The chapter also considers whether these resources are perceived as sufficient to provide high-quality instruction and equitable learning opportunities for all students, and explores the ways in which students use digital tools for learning and leisure. It then analyses key aspects of relationships with teachers and families and school climate, including teacher support for student learning, parental involvement, disciplinary climate, bullying and cyberbullying, and student attendance and truancy.[1] The chapter examines the relationship between these aspects and students' science performance in PISA 2025, as well as student attitudes towards learning.

Table I.4.1 summarises key relationships between school resources, relationships with teachers and families and school climate, and student science performance and attitudes towards learning, after accounting for schools' and students' socio-economic profile.

Table I.4.1. School resources, relationships with teachers and families, school climate, students' science performance and attitudes towards learning

Relationship between selected measures of student learning and indicators of school resources and learning environment, after accounting for students' and schools' socio-economic profile[1]; OECD average

		Science performance	Curiosity	Perseverance	Self-regulated goal setting	Self-regulated help seeking	Sense of belonging
School resources	Index of school's preparedness for digital learning						11 systems
	Students get distracted by digital devices in "most lessons" or "every lesson"	59 systems		73 systems	61 systems	48 systems	78 systems
	Index of use of Artificial Intelligence for schoolwork	37 systems	56 systems		66 systems	11 systems	55 systems
	Index of shortage of education staff	19 systems		14 systems		9 systems	18 systems
	Index of shortage of material resources	9 systems		6 systems	6 systems		7 systems
	Time spent per day doing homework in all subjects		79 systems	79 systems	81 systems	55 systems	28 systems
	Peer-to-peer tutoring	17 systems	9 systems		10 systems	13 systems	6 systems
Relationships with teachers and families	Index of teacher support in science lessons	56 systems	77 systems	76 systems	81 systems	81 systems	79 systems
	Index of students' perceptions of family support	69 systems	85 systems	81 systems	82 systems	80 systems	82 systems
School climate	Index of disciplinary climate in school science	77 systems	68 systems	77 systems	80 systems	78 systems	80 systems
	Index of exposure to bullying	66 systems	18 systems	77 systems	37 systems	77 systems	82 systems
	Truancy	80 systems	75 systems	80 systems	78 systems	81 systems	76 systems

1. The socio-economic profile is measured by the PISA index of economic, social and cultural status (ESCS).
The number of countries and economies showing relationships similar to that observed for the OECD average is indicated within each cell (see Annex A3).
Positive association observed on average across OECD countries and in N systems.
Negative association observed on average across OECD countries and in N systems.
No association observed on average across OECD countries.
Source: OECD, PISA 2025 Database, Chapter 4.

School resources

How financial resources are allocated and used within education systems matters as much as overall levels of investment. Quality of education and student performance will not simply be improved directly as a result of high investment. Previous PISA reports have shown that spending more per student is associated with higher performance, but only to a certain point (OECD, 2012[1]; OECD, 2023[2]). At the system level, PISA 2025 data show a clear positive association between student performance and expenditure on education per student, up to a certain threshold (Figure I.1.3, Chapter 1). This relationship is nonetheless far from deterministic. Above USD 85 000 per student, a higher level of spending is not automatically associated with a higher average score in science performance.

PISA 2025 collected new and trend measures of school-level resources to help contextualise student outcomes within and across education systems. Trend measures refer to variables that have been included in previous PISA cycles and therefore allow for the monitoring of changes over time, while new measures capture emerging aspects not previously assessed, such as students' AI usage.

Digital resources

Digitalisation is one of the major forces shaping today's world. In education, it has led to a steady increase in the availability and use of digital resources in schools.[2] While digital resources can open up new learning opportunities, increasing access alone is not enough. Policies need to support schools' capacity to integrate digital tools into teaching in effective and meaningful ways. A PISA report published over a decade ago already found no differences in student performance linked to greater access to digital devices and highlighted the importance of effective use (OECD, 2015[3]). Since then, the rapid increase in use of smartphones, digital devices and social media among young people has created additional policy challenges, including managing distraction in the classroom, curbing plagiarism and addressing risks related to student safety in the digital environment. More recently, the widespread availability and use of artificial intelligence (AI) have created additional opportunities and challenges for instruction and learning.

Availability and perceived shortages of digital resources

The availability of computers in school[3] has increased steadily, from six computers per ten students in 2012 to nine per ten students in 2025, on average across OECD countries (Table I.B1.4.2). An increase in the availability of computers in school between 2012 and 2025 is observable for most countries and economies with available data for both cycles, although six of them experienced a decline over this period. Between 2022 and 2025, availability rose in 31 of 75 countries and economies with comparable data, although ten recorded declines. Despite this overall rise, access remains uneven, with systematic differences across contexts.[4]

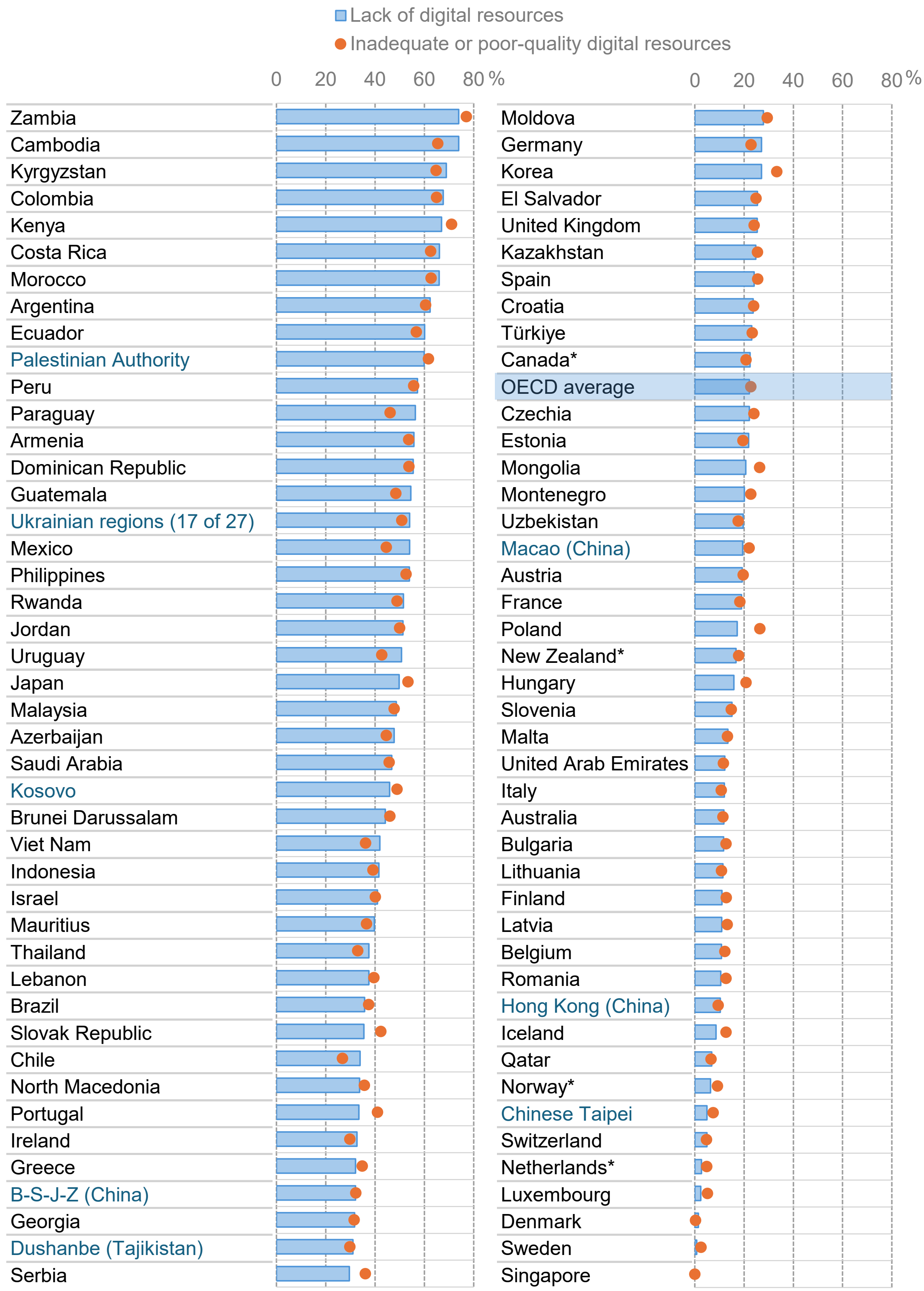
Availability of specific types of digital devices varies. Computers remain the most widely available digital device in schools, while the availability of tablet devices and e-book readers is much more limited, suggesting that digital reading devices play a more marginal role in most education systems. In 2025, schools reported around three tablets and less than one e-book per ten students on average across OECD countries (Tables I.B1.4.4 and I.B1.4.5).

Despite their growing availability, principals in many schools report shortages in terms of both quantity and quality of digital resources that hinder the school's capacity to provide instruction (Figure I.4.1). This is especially prevalent in countries with lower levels of income.[5] Perceived shortages are also more pronounced in public schools and socio-economically disadvantaged schools[6] (Table I.B1.4.7). Ensuring the provision not only of digital resources, but high-quality digital resources that are fit for purpose is essential in reducing digital inequalities that risk reinforcing social and educational inequalities (Gottschalk and Weise, 2023[4]).

On average across OECD countries, the overall level of perceived shortages in digital resources declined marginally (by 1 percentage point) between 2022 and 2025 (Table I.B1.4.9) and there is much variation across countries/economies. On the one hand, six countries and economies (Mongolia, Montenegro, Uzbekistan, Greece, Kosovo and the Ukrainian regions (17 of 27)) recorded reductions in shortages by over 20 percentage points or more. On the other hand, four OECD countries (New Zealand*, Türkiye, Canada* and Ireland) saw an increase in principal-reported shortages of between 8 and 17 percentage points.

Figure I.4.1. Shortage of digital devices

Percentage of students enrolled in schools whose principal reported that a lack of digital resources or inadequate or poor-quality digital resources hindered the school's capacity to provide instruction to some extent or a lot



Note: *Countries and economies are ranked in descending order of the percentage of students enrolled in schools whose principal reported that a lack of digital resources hindered the school's capacity to provide instruction to some extent or a lot.*
Source: OECD, PISA 2025 Database, Table I.B1.4.6. See https://stat.link/o1j4k0 for the underlying data.

Shortages of digital resources are associated with lower student performance in science; however, this association is largely accounted for by socio-economic disparities (Table I.4.2). The relationship between shortages of digital resources and performance in computational problem-solving follows a similar pattern, observed in many countries, with sizeable score-point differences that can be accounted for by socio-economic disparities (Table I.B1.4.10). The availability of digital resources for teaching staff – measured by the number of Internet-connected computers available per teacher[7] – also shows no clear association with students' science performance (Table I.B1.4.13).

At the system level, across all countries and economies, a larger proportion of students enrolled in schools reporting shortages of digital resources tend to have lower average performance scores in science, even after accounting for GDP per capita (Table I.4.2). This indicates that, beyond national income levels, the prevalence of digital shortages within school systems is associated with lower performance scores.

Table I.4.2. Shortage of digital devices and student science performance

	Within education systems						Between education systems (system-level correlations)			
	OECD average		Negative association		Positive association		Across OECD countries		Across all countries and economies	
	Before ESCS[1]	After ESCS	Before ESCS	After ESCS	Before ESCS	After ESCS	Correl.	Partial correl.	Correl.	Partial correl.
	Score points	*Score points*	*Number of education systems[2]*	*Number of education systems[2]*	*Number of education systems[2]*	*Number of education systems[2]*	*r coef.*	*r coef.*	*r coef.*	*r coef.*
Number of computers per student	0 point	0 point	23	12	18	14	**0.44**	**0.46**	**0.60**	**0.37**
Lack of digital resources	-13 points	-2 points	37	13	0	3	**-0.44**	**-0.37**	**-0.66**	**-0.37**
Inadequate or poor-quality digital resources	-14 points	-1 point	44	14	3	5	**-0.39**	-0.35	**-0.65**	**-0.36**

1. ESCS refers to the PISA index of economic, social and cultural status.
2. Number of education systems in which the association is statistically significant.
Correlation coefficients indicated in bold are statistically significant (see Annex A3).
Positive association.
Negative association.
No association.
Source: OECD, PISA 2025 Database, Tables I.B1.4.3, I.B1.4.10 and I.B1.4.187. See https://stat.link/o1j4k0 for the underlying data.

School capacity to enhance teaching and learning using digital devices

Translating digitalisation into better outcomes requires that schools incorporate digital resources effectively into teaching and learning. PISA 2025 asked school principals whether their school has the capacity to enhance teaching and learning using digital devices, in terms of device availability, skills and time.[8]

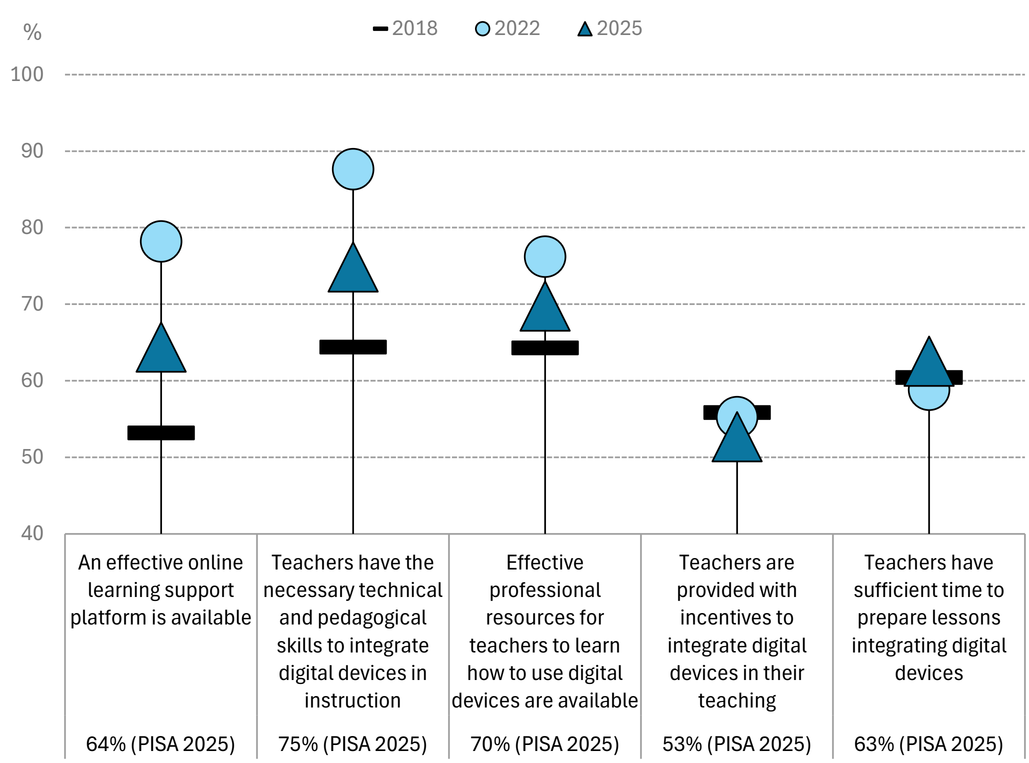
School principals in 2025 reported lower levels of preparedness for digital learning than in 2022, on average across OECD countries and in about half of education systems with available data (Table I.B1.4.16). This decline possibly reflects post-pandemic reassessments of what constitutes effective tools for digital learning, as well as shifting investment and learning priorities in some contexts (Zancajo, Verger and Bolea, 2022[5]). Generative AI, which began to spread widely around 2022, may also have contributed to this trend as it poses additional challenges for teachers regarding training, skills, confidence and reluctance to incorporate these tools into their practice (OECD, 2025[6]).

Between 2018 and 2025, changes across the different measured dimensions of school capacity to enhance teaching and learning by using digital devices do not show consistent patterns, as shown in Figure I.4.2. The dimension that declined in the largest number of countries and economies between 2022 and 2025 was teacher skills in integrating digital devices into instruction, although this remains higher than the levels reported in 2018 in most systems with available data (Table I.B1.4.17). In a few countries and economies (including Iceland, the Netherlands*, Thailand, Hong Kong (China), Sweden and Switzerland), a decline in this dimension was not observed, with over 80% of students enrolled in schools where principals reported their teachers have the necessary skills to integrate digital devices into instruction (Tables I.B1.4.14 and I.B1.4.17). In those countries/economies, increases were observed between 2018 and 2022 that levelled off between 2022 and 2025, except for Iceland, which continued to increase over the latter period.

Trends in principals' reporting that teachers have sufficient time to prepare lessons integrating digital devices varied widely, with increases in 10 systems and declines in 16 since 2022. This indicates greater cross-national variability than in other aspects of school digital capacity.

Figure I.4.2. School capacity to enhance teaching and learning using digital devices: 2018 through 2025

Percentage of students in schools whose principal reported to agree or strongly agree with the following; OECD average



Note: All differences between PISA 2025 and earlier cycles for each category are statistically significant (see Annex A3).
Source: OECD, PISA 2025 Database, Table I.B1.4.17. See https://stat.link/o1j4k0 for the underlying data.

Disparities in school capacity to enhance teaching and learning using digital resources remain pronounced. In most countries and economies, principals in schools with more socio-economically advantaged students reported higher levels of preparedness for digital instruction than those in schools serving disadvantaged populations (Table I.B1.4.15). These gaps may limit the potential of digitalisation to reduce educational inequalities and, in some cases, risk reinforcing existing disparities.

In many education systems, a higher level of preparedness for digital learning shows a positive association with students' science performance. However, these differences are not observed after accounting for students' and schools' socio-economic profile (Table I.B1.4.18). Further research and targeted policies are essential to reduce socio-economic disparities in schools' digital preparedness for teaching and learning and prevent widening gaps in student performance.

At the system level, greater preparedness of schools for digital learning is associated with higher average scores in science, mathematics and reading (Table I.B1.4.187). After accounting for per capita GDP, cross-country differences in preparedness for digital learning account for about 14% of the variation in mean science performance across all countries and economies. Well-prepared schools may play an important role by shaping the quality, coherence and pedagogical use of digital tools, thereby creating more favourable conditions for students to develop effective digital learning practices.

Beyond academic performance, school preparedness for digital learning shows little association with students' attitudes towards learning, with no relationships observed in most participating countries and economies (Table I.B1.4.20).

Students' use of digital resources

On average across OECD countries, students spend about 6 hours per day on weekdays and 5 hours per day on weekends using digital devices, for both academic and leisure purposes. Time spent on digital devices varies widely across systems, ranging from less than 4 hours to more than 12 hours per weekday, and from less than 3 hours to around 7 hours per weekend day (Table I.B1.4.21).

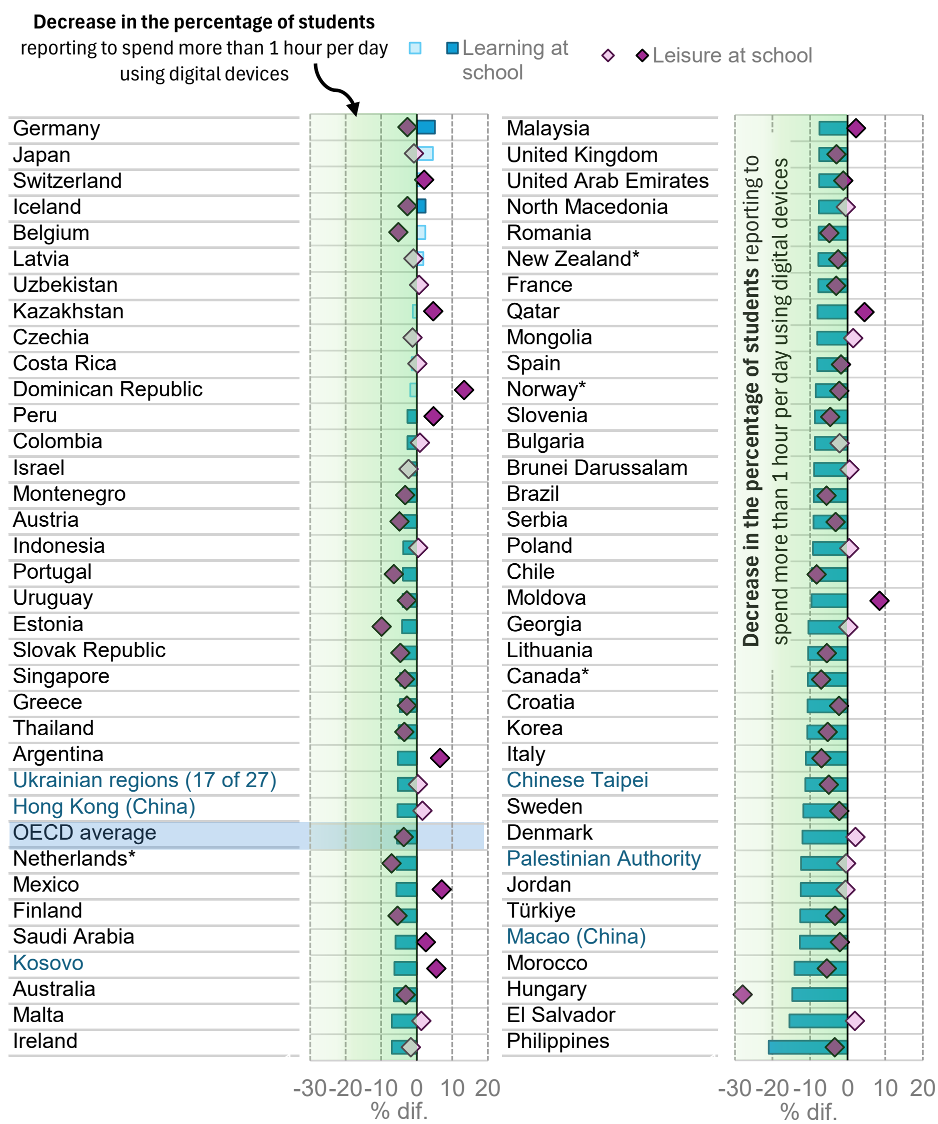
Students tend to spend more time using digital devices for leisure than for learning throughout the week. On average across OECD countries, students use digital devices around 3.4 hours per day on leisure activities both on weekdays and weekends (Table I.B1.4.21). In comparison, students use these devices for learning for close to 3 hours per weekday, including 1.2 hours before and after school, and for 1.4 hours per day on weekends.

Learning activities account for a substantial, though not exclusive, share of students' device use during the school day. On average across OECD countries, students reported spending 1.7 hours per day using digital devices at school for learning activities and 1.1 hours per day for leisure while at school (Table I.B1.4.21). The amount of time spent using digital devices for learning at school varied substantially across countries/economies, ranging from 0.9 hours per day in Guatemala to 3.2 hours per day in Denmark, Iceland and Rwanda. Leisure-related use while at school also varied widely, ranging from 0.4 hours per day in Japan to 2.9 hours per day in Rwanda.

Time spent using digital devices at school declined moderately between 2022 and 2025 in most countries and economies, reflecting a shift towards shorter use during the school day (less than one hour per day) or no use at all (Figure I.4.3 and Table I.B1.4.29). This decline might be interpreted under the lens of several factors, including post-pandemic reassessment of the use of digital devices for learning, school policies restricting the use of digital devices, or a more general trend of decreased use (Box I.4.1). It could also reflect patterns indicating that children's digital lives are increasingly embedded in their everyday activities, suggesting the distinction between "digital" and "offline" time is less relevant (Staksrud, Livingstone and Ólafsson, 2026[7]).

Figure I.4.3. Change between 2022 and 2025 in time spent per day using digital devices at school

Percentage-point difference (PISA 2025 - PISA 2022) of students reporting to spend more than 1 hour per day using digital devices at school for learning and for leisure activities



Notes: Percentage-point differences that are statistically significant are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the change in the percentage of students reporting to spend more than 1 hour per day using digital devices at school for learning.
Source: OECD, PISA 2025 Database, Table I.B1.4.30. See https://stat.link/o1j4k0 for the underlying data.

Box I.4.1. Leisure time on digital devices has declined outside of school

Students in 2025 reported spending less time on digital devices outside of school on average across OECD countries compared to 2022, both for learning[9] and leisure purposes (Table I.B1.4.29). The share of students spending more than two hours per day using digital devices on leisure activities on weekdays, before and after school, and on weekends declined by 6 percentage points.

Between 2022 and 2025, some of the largest reductions in time spent using digital devices for leisure were seen in more intensive users. On average, the proportion of students spending over 7 hours per day on digital leisure activities on weekends decreased by 3.6 percentage points, and those spending 5-7 hours decreased by 2.4 percentage points. The reduction in higher levels of use may be promising for outcomes related to well-being and performance.[10]

A redistribution of time across digital leisure activities

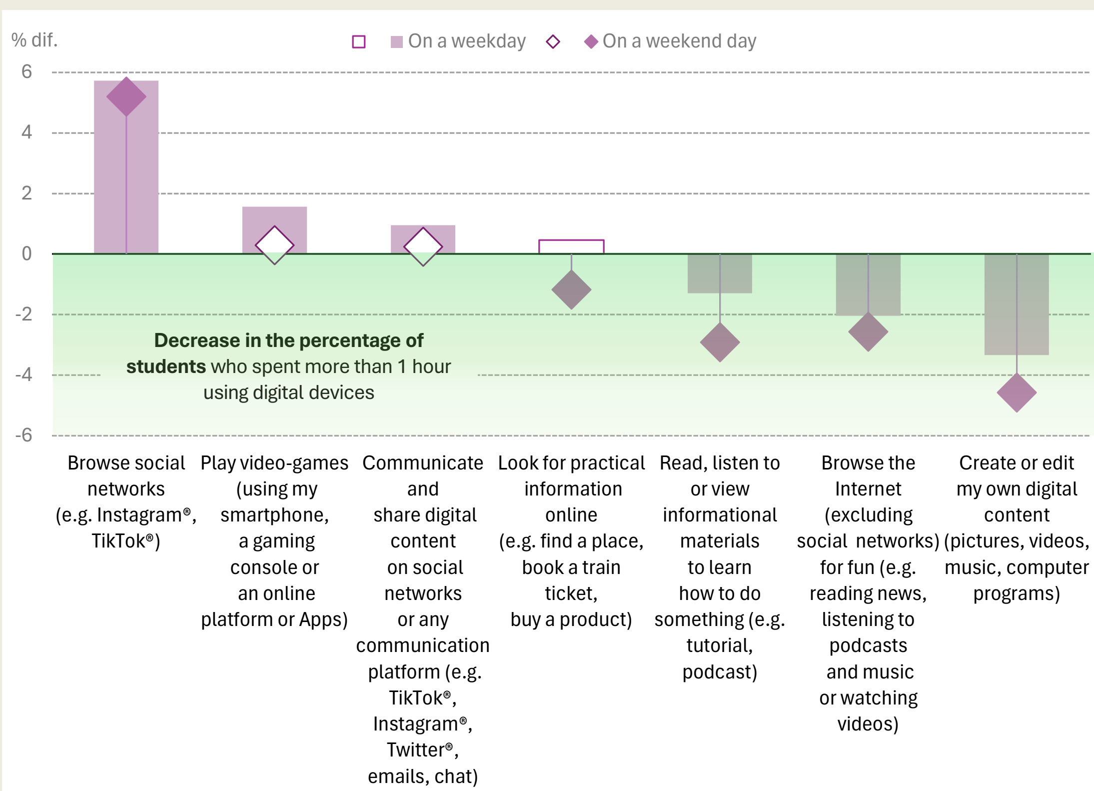
PISA 2025 data provide granular results which help interpret the observed trends described in the previous section.

What students do in the digital environment, and how much time they spend doing it, has shifted since 2022 (Figure I.4.4). On the one hand, there has been an increase in the share of students reporting that they use digital devices for more than one hour a day to browse social networks, both on weekdays and weekends, or play video games on weekdays (Tables I.B1.4.39 and I.B1.4.42). The share of extensive users (more than 5 hours per day) of video games showed a slight decrease of less than 2 percentage points on weekdays and weekends (Tables I.B1.4.38 and I.B1.4.41). On the other hand, there was also a higher proportion of students reporting limited or no use of devices for certain things such as informational activities (e.g. looking for practical information online) and creative activities (e.g. creating digital content).

In summary, the reduction in overall digital leisure time outside of school appears to be driven by reduced engagement in creative activities and in seeking practical or entertaining information, while time spent on social media has increased.

Figure I.4.4. Change between 2022 and 2025 in time spent on leisure activities

Percentage-point difference (PISA 2025 - PISA 2022) of students who spent more than one hour per day, on weekdays or weekends, doing the following digital activities; OECD average-21



Notes: Percentage-point differences that are statistically significant are shown in a darker tone (see Annex A3).
OECD average-21 refers to the arithmetic mean across the 21 OECD countries with available data.
Source: OECD, PISA 2025 Database, Tables I.B1.4.39 and I.B1.4.42. See https://stat.link/o1j4k0 for the underlying data.

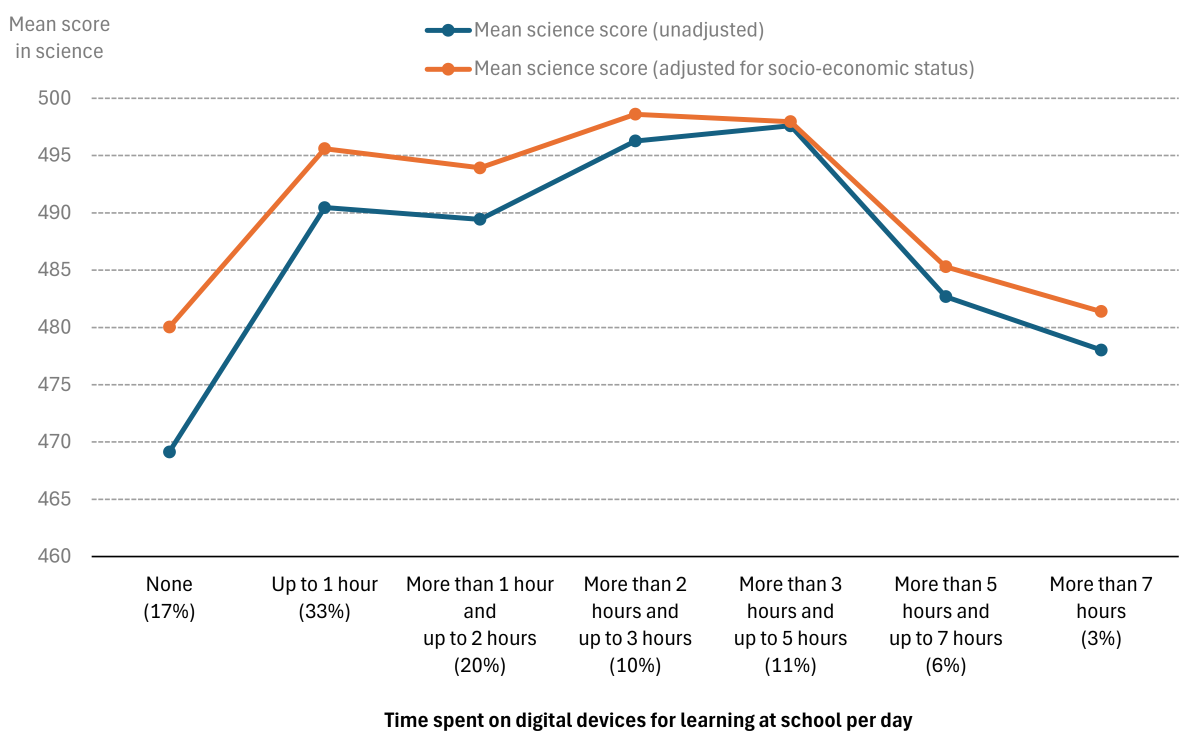
The association between science performance and the time spent using digital devices at school is shown in Figure I.4.5. and Figure I.4.6. Taken together, they show that the association differs markedly by the purpose of use. Limited or moderate use (up to 5 hours a day) of digital devices for learning activities is associated with higher scores in science than non-use or high use. The lower performance observed among non-users of digital devices for learning at school may reflect underlying factors independent of student socio-economic profile, such as higher school-level shortages of digital devices or lower school preparedness for digital learning.

Use of digital devices for leisure at school past a certain threshold is associated with lower science performance.[11] In contrast to learning-related use, this threshold appears lower. On average across OECD countries, science scores are highest among students who use devices for leisure at school for up to one hour per day. After the one-hour threshold, the longer students reported to use digital devices for leisure at school, the lower they scored in science performance (Table I.B1.4.35).[12] These students may be using digital devices beyond recess time or time allowed to use them for leisure. Balancing the use of digital tools with educational and other health-supporting activities is key to ensuring that technology enhances students' learning rather than distracts from it.

These results underscore the need for clearer guidance on the effective use of digital devices in schools and measures to balance students' digital engagement outside of school with other activities. They also emphasise that students' use of digital tools requires a nuanced understanding of the intention and timing of use, as these factors together have implications for student performance.

Figure I.4.5. Time spent on digital devices for learning at school per day and science performance

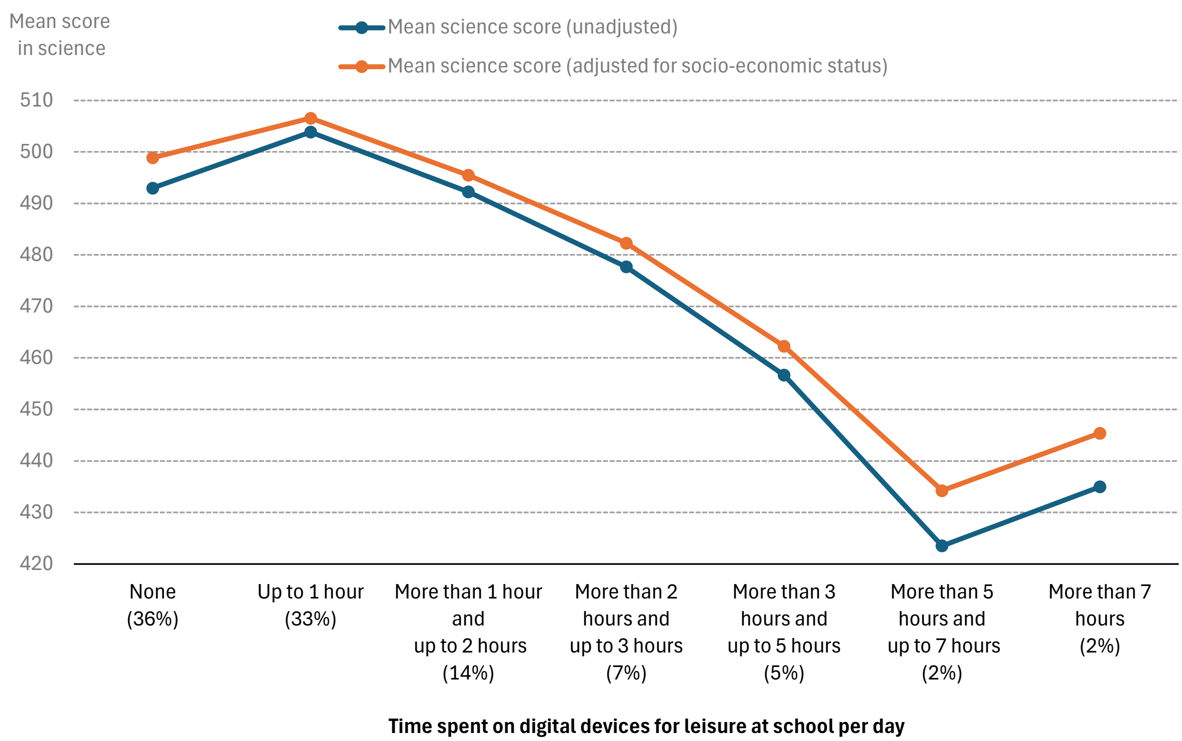
Based on students' reports; OECD average



Notes: Mean scores adjusted for socio-economic status are predicted science scores estimated from a regression of science performance on the daily time spent using digital devices for learning at school, after accounting for students' socio-economic status.
The percentages in parentheses under each horizontal-axis category indicate the percentage of students who reported using digital devices for learning activities at school for that amount of time, on average across OECD countries (e.g. 17% reported no use; 33% reported up to 1 hour).
Source: OECD, PISA 2025 Database, Tables I.B1.4.21 and I.B1.4.33. See https://stat.link/o1j4k0 for the underlying data.

Figure I.4.6. Time spent on digital devices for leisure at school per day and science performance

Based on students' reports; OECD average



Notes: Mean scores adjusted for socio-economic status are predicted science scores estimated from a regression of science performance on daily time spent using digital devices for leisure at school, after accounting for students' socio-economic status.
The percentages in parentheses under each horizontal-axis category indicate the percentage of students who reported using digital devices for leisure at school for that amount of time, on average across OECD countries (e.g. 36% reported no use; 33% reported up to 1 hour).
Source: OECD, PISA 2025 Database, Tables I.B1.4.21 and I.B1.4.35. See https://stat.link/o1j4k0 for the underlying data.

Beyond academic performance, total time spent using digital devices – including time spent both at school and outside of school hours, including weekends, for either learning or leisure purposes – is only weakly associated with students' attitudes towards learning, with patterns varying across dimensions measured (Table I.B1.4.36). An additional hour of digital device use per week is associated with slightly higher levels of curiosity and goal setting, both before and after accounting for students' and schools' socio-economic profile. It is also associated with slightly lower levels of sense of belonging at school, and – after adjustment – help seeking and perseverance.

Digital distraction in science lessons

Digital distraction has become a prominent concern at school. On average across OECD countries in 2025, 28% of students reported that their peers are distracted by the use of digital devices and tools such as smartphones, websites and applications, during most or every science lesson (Figure I.4.7).

In most countries and economies, levels of digital distraction in science lessons are broadly similar across schools with different socio-economic profiles. On average across OECD countries, however, the share of students reporting digital distraction during science lessons is higher in disadvantaged schools (31%) than in advantaged schools (26%; Table I.B1.4.43). This pattern is observed in 32 countries and economies. By contrast, in 9 countries and economies, students in advantaged schools report higher levels of digital distraction.

PISA 2022 documented comparable patterns in mathematics lessons: 30% of students reported that classmates get distracted by using digital devices in every lesson or in most lessons (OECD, 2023[8]). Although the two indicators are not directly comparable – since the 2025 measure refers to science classes and the 2022 measure to mathematics – they nonetheless suggest that managing students' use of digital devices in the classroom continues to be a major challenge.

Figure I.4.7. Distraction from digital devices in science lessons

Percentage of students who reported that students get distracted by using digital devices in most or every science lesson

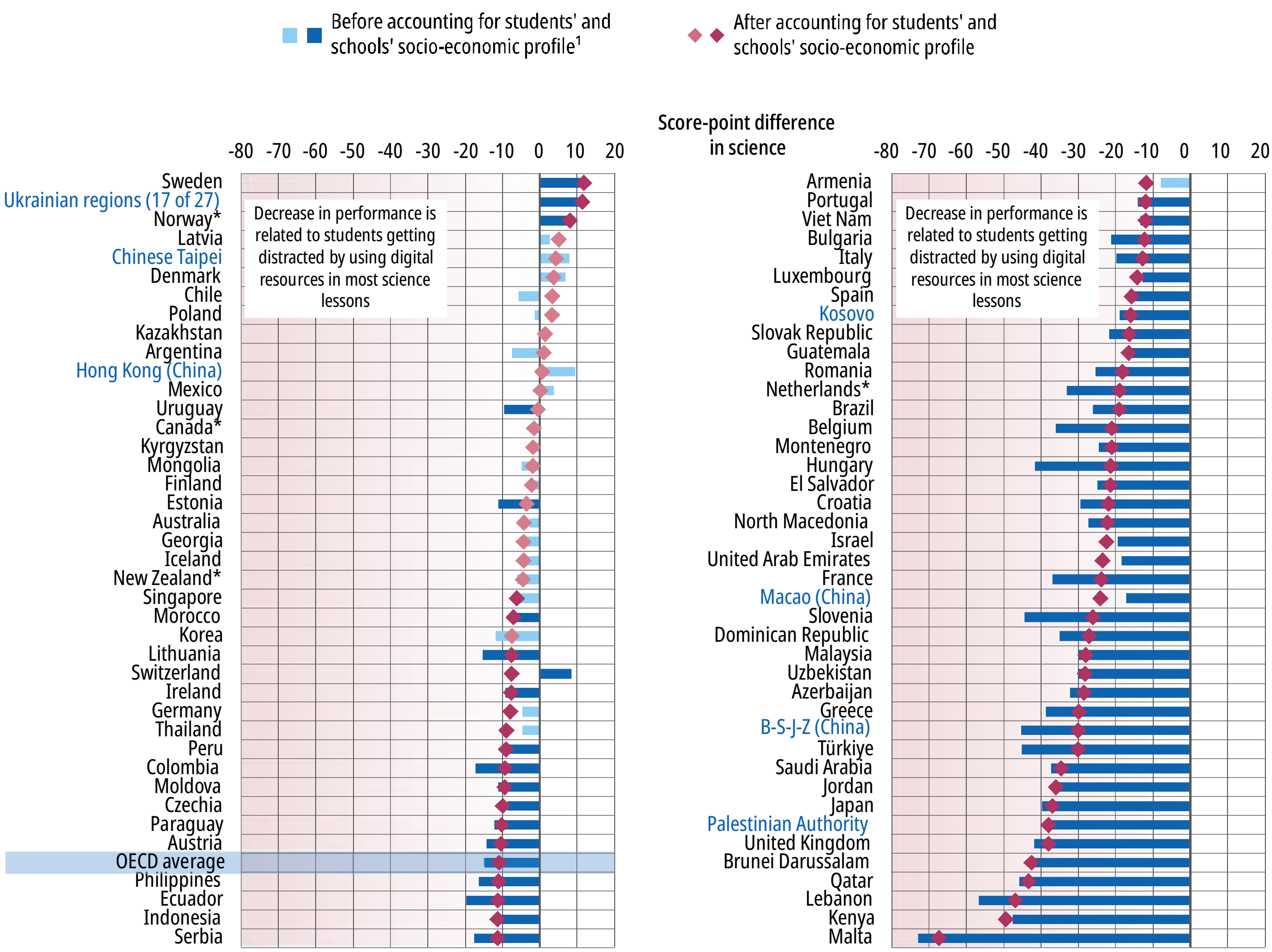
Note: *Countries and economies are ranked in descending order of the percentage of students who reported that students get distracted by using digital devices in most or every science lesson.*
Source: OECD, PISA 2025 Database, Table I.B1.4.43. See https://stat.link/o1j4k0 for the underlying data.

Higher levels of distraction in science lessons are associated with lower science performance in more than two-thirds of participating countries and economies with available data (Figure I.4.8). These patterns may reflect the reduced effective learning time and the cognitive costs of divided attention: exposure to interruptions or competing stimuli, whether digital or otherwise, can impair students' ability to follow instruction, retain information and engage in scientific reasoning.

However, the relationships between digital distraction and performance are not uniform across countries and economies. In three countries and economies, a positive association is observed after accounting for socio-economic profile, with students who report frequent digital distraction in their science lessons achieving higher scores in science. This pattern may arise in classrooms in which digital tools are more frequently used for instructional purposes, creating both greater opportunities for learning and greater potential for off-task behaviour. It might also reflect learning environments where academically stronger or more confident students engage more often with devices, either for class-related tasks or for multi-tasking. These cross-country differences suggest that the relationship between digital distractions and student performance depends critically on the quality of technology integration, the structure of classroom activities, and the degree of pedagogical guidance provided by teachers.

Figure I.4.8. Distraction from digital devices and science performance

Change in science performance when students reported that students get distracted by using digital resources in most or every science lesson



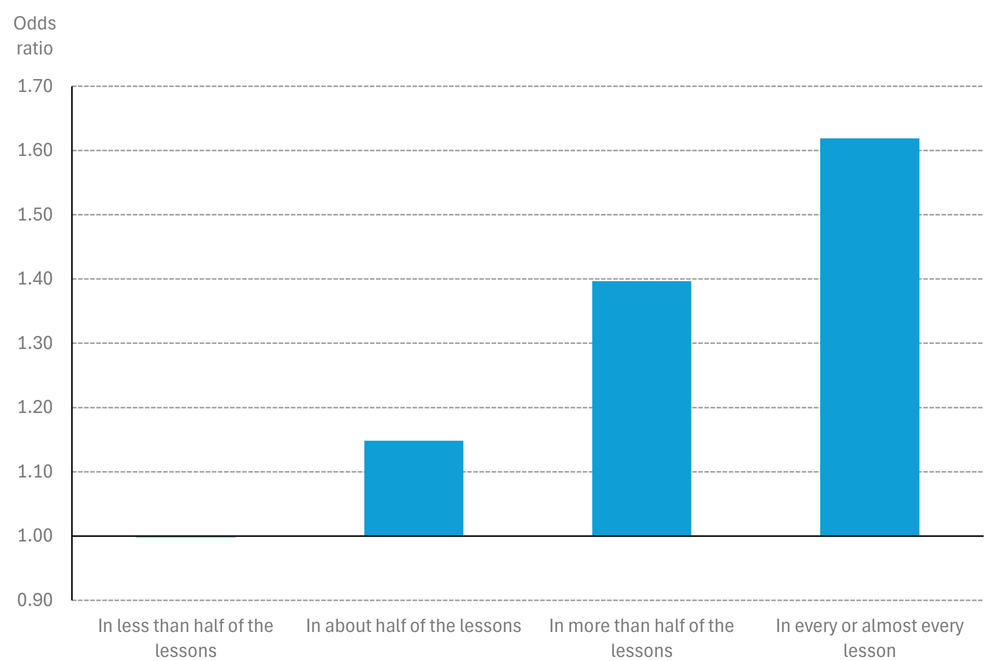
1. The socio-economic profile is measured by the PISA index of economic, social and cultural status (ESCS).
Statistically significant values are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the score-point difference in science, after accounting for students' and schools' socio-economic profile.
Source: OECD, PISA 2025 Database, Table I.B1.4.44. See https://stat.link/o1j4k0 for the underlying data.

Beyond academic performance, digital distraction in science lessons is consistently associated with less positive attitudes towards learning (Table I.B1.4.45). In most countries and economies participating in PISA, students who reported that classmates get distracted by using digital devices in most or every science lesson show lower levels of key positive attitudinal outcomes, most noticeably, sense of belonging at school.[13] The direction of this relationship however is unclear, and these results could suggest that students with a lower sense of belonging at school are more likely to succumb to digital distraction, that digital distraction has implications for sense of belonging, or that these could be reinforcing one another to some extent.

Digital distraction is greater among students who report higher use of digital devices during lessons. On average across countries, and after accounting for students' and schools' socio-economic profile, students who report more frequent use of digital devices in science lessons are more likely to report digital distraction, with the highest likelihood observed when digital resources are used in every or almost every lesson (Figure I.4.9).

Figure I.4.9. Digital distraction and frequency of use of digital devices in science lessons

Change in the likelihood of frequent digital distraction during science lessons, by use of digital devices in science lessons; OECD average



Notes: Values that are statistically significant are shown in a darker tone (see Annex A3).
The reference group comprises students who reported that they never or almost never use digital resources in their school science lessons. The odds ratios represent the relative likelihood that students reported digital distraction in most or every science lesson, according to how frequently they reported using digital devices in science lessons, compared with students who reported never or almost never using them. Significant values above (below) 1 indicate that students are more (less) likely to report digital distraction in most or every science lesson than those in the reference group (see Annex A3). The odds ratios are estimated after accounting for students' and schools' socio-economic profile. The socio-economic profile is measured using the PISA index of economic, social and cultural status (ESCS).
Source: OECD, PISA 2025 Database, Table I.B1.4.46. See https://stat.link/o1j4k0 for the underlying data.

School policies play a role in shaping students' use of digital devices. Across participating education systems, schools have introduced a range of measures such as guidelines regulating the use of smartphones and other digital devices during lessons and on school premises. PISA 2025 results show that some policies are associated with lower levels of digital distraction in science lessons.

Across OECD countries, most students attend schools that have some form of policy or practice regulating the use of digital devices, and the prevalence of such policies has increased since PISA 2022 (Tables I.B1.4.47 and I.B1.4.48). In particular, restrictions on cell phone use have expanded markedly, with nearly half of students on average across OECD countries now enrolled in schools where cell phone use is not allowed on school premises, up from 34% in 2022. At the same time, 71% of students attend schools with formal, subject-specific guidelines for the pedagogical use of digital devices, a share that has increased by 4 percentage points since 2022. By contrast, other approaches – such as collaborative rule-setting with students or programmes related to responsible Internet behaviour – have, in some cases, become less prevalent.

Cell phone bans and subject-specific policies are closely interrelated at the school level. Schools applying one of these policies tend to have the other policy as well (Table I.B1.4.49). Between 2022 and 2025, schools typically adopted cell phone bans along with subject-specific guidelines, rather than just implementing a ban. On average across OECD countries, the share of students enrolled in schools implementing both policies increased by 13 percentage points between 2022 and 2025, while the share enrolled in schools with only cell phone bans increased by 3 percentage points. In comparison, the share of students enrolled in schools implementing only subject-specific guidelines declined by 9 percentage points, and the share enrolled in schools with neither policy declined by 7 percentage points (Table I.B1.4.49).

On average across OECD countries, after accounting for students' and schools' socio-economic profile, students are less likely to report that classmates get distracted by digital devices in schools where cell phone use is not allowed on school premises, and in schools that have formal, subject-specific guidelines for the use of digital devices in teaching and learning (Figure I.4.10). Lower levels of digital distraction were reported by those students who are in schools with cell phone bans, with or without subject-specific guidelines (OECD average: 27% for distraction), than those in schools with only subject-specific guidelines (OECD average: 29%) or no policies (OECD average 32%; Table I.B1.4.52).

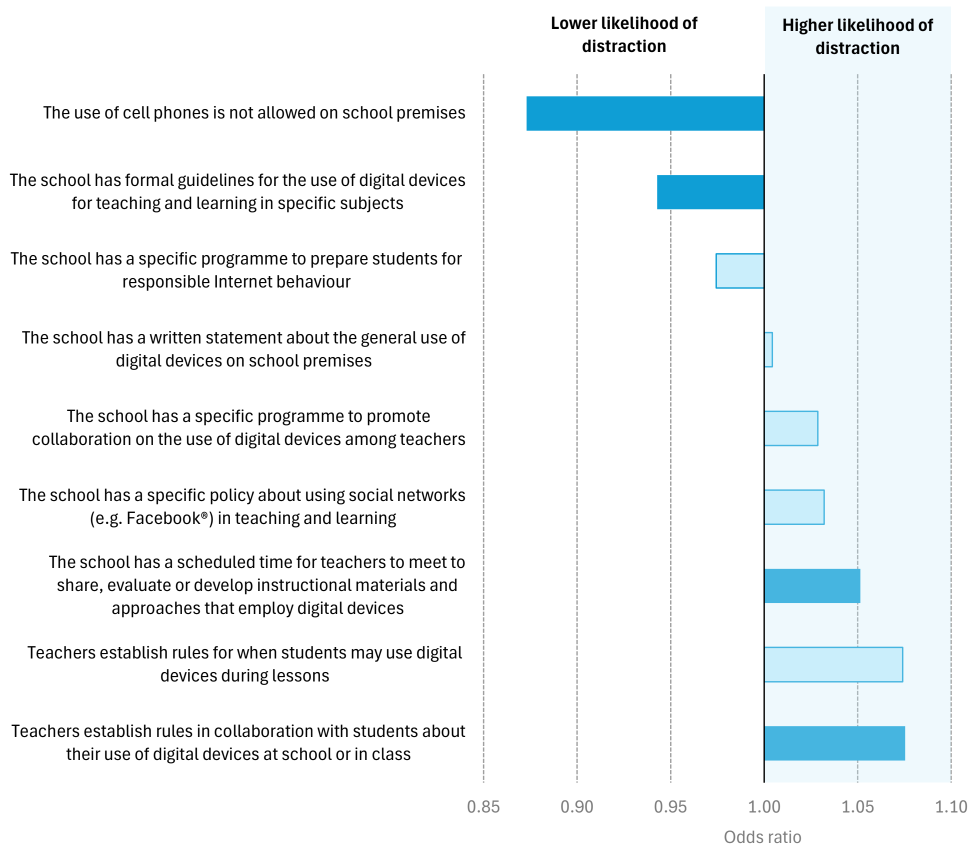
Other commonly reported school policies – such as general statements on digital device use, classroom rules established by teachers (with or without student input), or programmes related to responsible Internet behaviour, social media use, or teacher collaboration – show no clear association with lower levels of reported digital distraction at the student level (Figure I.4.10).

At the system level, after accounting for per capita GDP, countries and economies with a higher share of students enrolled in schools with cell phone bans, as well as those with a higher share of students enrolled in schools with formal and subject-specific guidelines, tend to report lower levels of digital distraction (Table I.B1.4.186). The correlation is stronger for cell phone bans than for formal and subject-specific guidelines.

Cell phone bans may also have implications for the time students spend on digital leisure activities during the school day. At the system level, the increased proportion of students in schools with cell phone bans between 2022 and 2025 is associated with an increase in the percentage of students spending 1 hour per day or less using digital devices for leisure at school (Table I.B1.4.186).[14] This suggests that cell phone bans may partially explain the increase in the share of students who spend lower amounts of time on digital leisure activities at school.

Figure I.4.10. Digital distraction and school policies on the use of digital devices

Change in the likelihood of student distraction during science lessons, by school policies on the use of digital devices; OECD average



Notes: Values that are statistically significant are shown in a darker tone (see Annex A3).
For each school policy on the use of digital devices, the reference group corresponds to students in schools where the policy is not implemented, according to principals' reports. The odds ratios represent the relative likelihood that students reported digital distraction in most or every science lesson, according to whether they are enrolled in a school implementing a specific policy, compared with students enrolled in schools where the policy is not implemented. Significant values above (below) 1 indicate that students are more (less) likely to report digital distraction in most or every science lesson than those in the reference group (see Annex A3). Odds ratios are calculated after accounting for students' and schools' socio-economic profile. The socio-economic profile is measured using the PISA index of economic, social and cultural status (ESCS).
Source: OECD, PISA 2025 Database, Table I.B1.4.51. See https://stat.link/o1j4k0 for the underlying data.

Changes since 2022 in cell phone bans are, however, not associated at the system level with changes in average science or reading performance (Table I.4.3 and I.B1.4.189). In 2025, countries and economies where cell phone bans were more prevalent tended to have lower average science performance (Table I.B1.4.187). The PISA data do not allow for causal inference and therefore do not necessarily indicate that the bans themselves lead to lower performance. Rather, the findings may suggest that systems with lower performance are more likely to have introduced such bans as mitigation measures.

Table I.4.3. School policies on the use of digital devices and student science performance

	Within education systems						Between education systems (system-level correlations)							
							In 2025				Change (PISA 2025 - PISA 2022)			
	OECD average		Negative association		Positive association		Across OECD countries		Across all countries and economies		Across OECD countries		Across all countries and economies	
	Before ESCS[1]	After ESCS	Before ESCS	After ESCS	Before ESCS	After ESCS	Correl.	Partial correl.	Correl.	Partial correl.	Correl.	Partial correl.	Correl.	Partial correl.
	Score points	*Score points*	*Number of education systems*[2]	*Number of education systems*[2]	*Number of education systems*[2]	*Number of education systems*[2]	*r coef.*	*r coef.*	*r coef.*	*r coef.*	*r coef.*	*r coef.*	*r coef.*	*r coef.*
The use of cell phones is not allowed on school premises	-6 points	-4 points	19	21	12	10	0.00	-0.33	-0.19	**-0.26**	0.18	0.07	0.01	0.03
The school has formal guidelines for the use of digital devices for teaching and learning in specific subjects	0 point	0 point	9	8	17	6	0.03	-0.30	0.06	-0.20	-0.14	-0.01	0.00	-0.01

1. ESCS refers to the PISA index of economic, social and cultural status
2. Number of education systems in which the association is statistically significant.

Correlation coefficients indicated in bold are statistically significant (see Annex A3).

Positive association.

Negative association.

No association.

Source: OECD, PISA 2025 Database, Tables I.B1.4.50, I.B1.4.187 and I.B1.4.189. See https://stat.link/o1j4k0 for the underlying data.

Students' use of artificial intelligence for schoolwork

The rapid development of artificial intelligence (AI) tools, such as chatbots, has created new opportunities and new challenges for education systems. AI chatbots differ from other digital resources analysed in this chapter in that they became available to the public only in late 2022 and their use has expanded across regions and languages since then (Loh, 2023[9]).

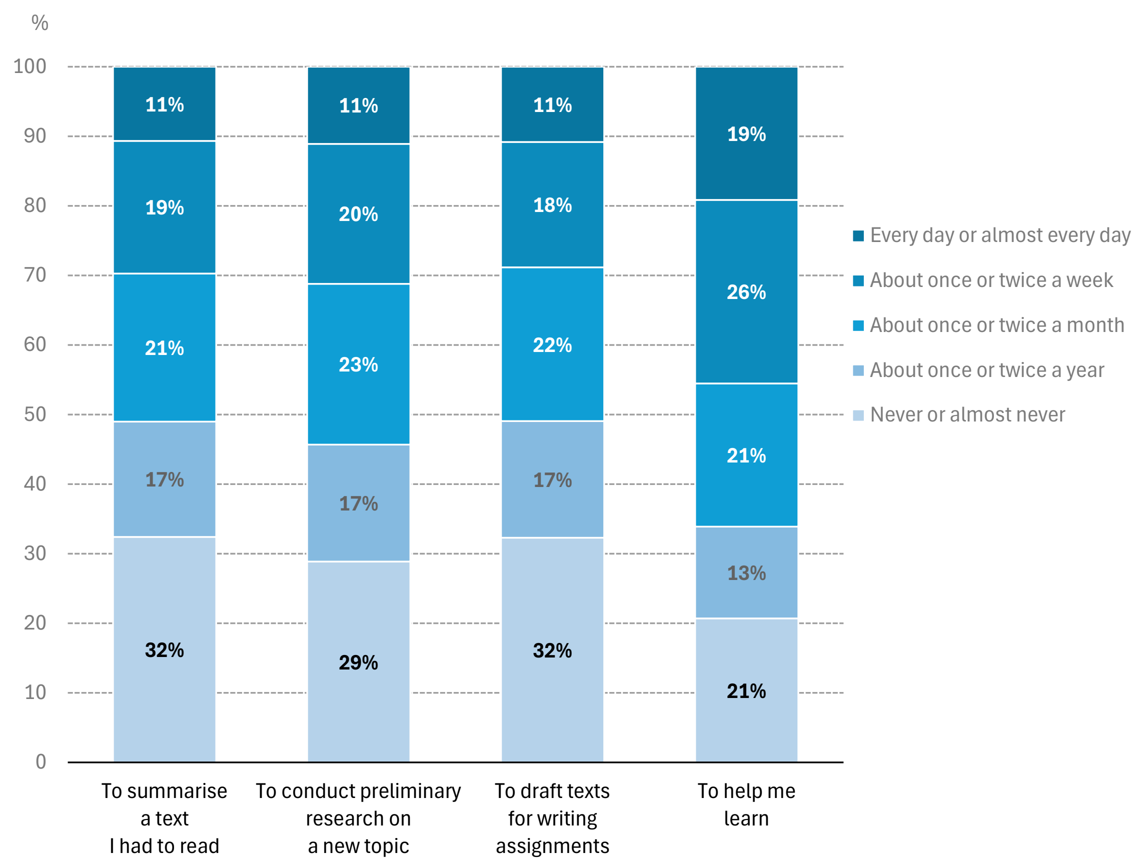
PISA results presented in this section show that by 2025, AI chatbots (such as ChatGPT) were used for schoolwork by a majority of students in most participating countries and economies. However, frequency of use remains differentiated across students and contexts, and in some countries and economies their use remains limited.

PISA shows that students who do not use AI chatbots for schoolwork generally score higher than students who do, and are more likely to report higher levels of help-seeking behaviours, suggesting that AI use is not a prerequisite for success, at least at the time of PISA 2025. However, among students who use AI for schoolwork for a general purpose ("to help me learn"), those who report moderate use score slightly higher in PISA than students who use it either rarely or intensively. This pattern mirrors the broader finding on the relationship between performance and time spent using digital devices for learning activities at school. It also reflects the notion that digital tools can support learning when used purposefully and in moderation, whereas excessive or unguided use can lead to distraction and shallower engagement, ultimately negatively affecting learning outcomes.

In 2025, PISA collected information on how frequently students use AI-based chatbots in their schoolwork for different purposes. These include specific academic tasks such as summarising assigned reading texts, conducting preliminary research, and drafting writing assignments, as well as a variety of other purposes captured under the general label: "to help me learn". On average across OECD countries, "to help me learn" is the most commonly reported purpose for using AI, followed by "to conduct preliminary research on a new topic", "to draft text for written assignments" and "to summarise a text I had to read" (Figure I.4.11, and country-level Figures I.4.o1 to I.4.o4 online).

Figure I.4.11. Students' use of artificial intelligence chatbots for schoolwork

Percentage of students who reported using AI chatbots (e.g. ChatGPT) for their schoolwork to carry out the following activities; OECD average

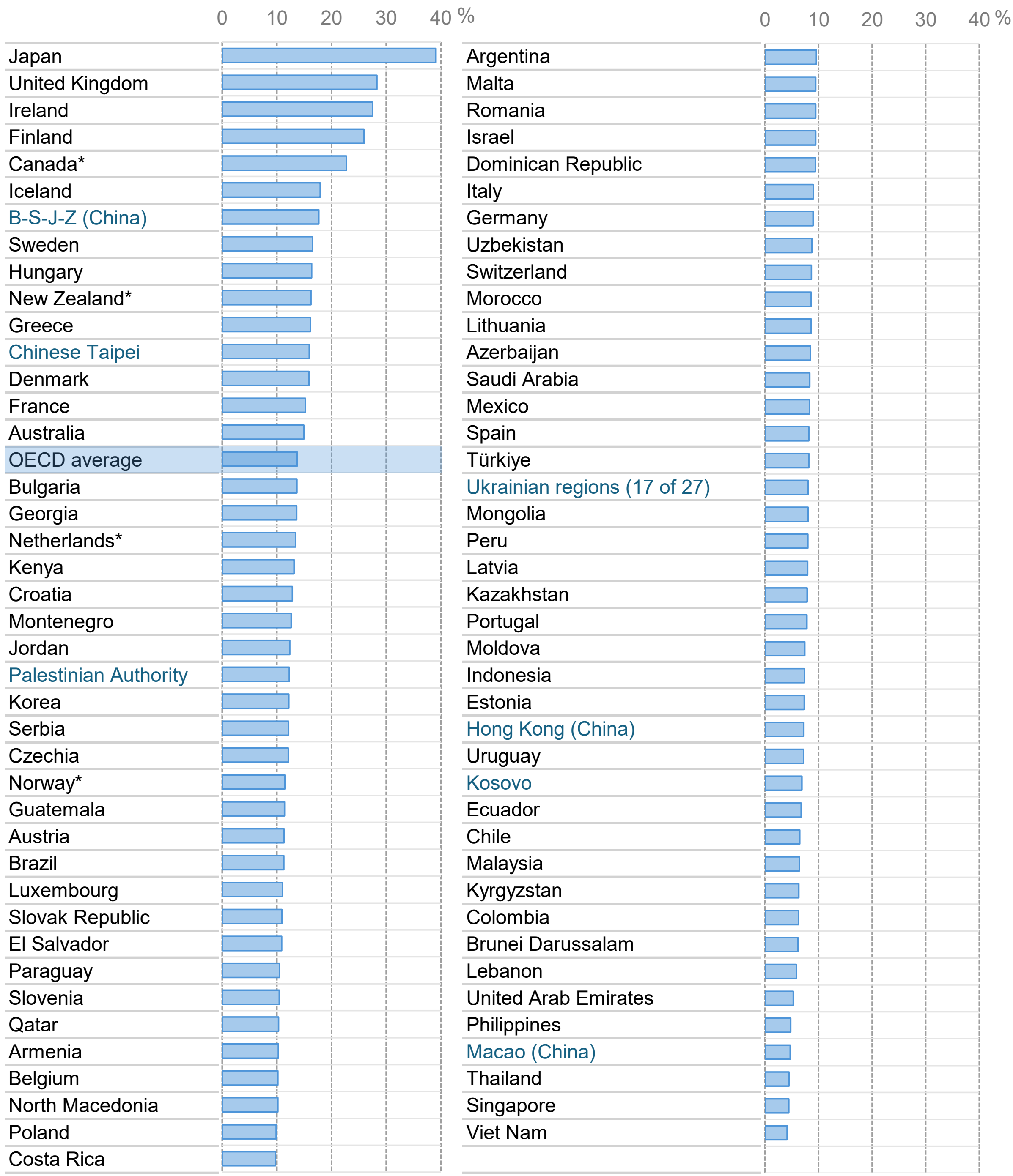


Source: OECD, PISA 2025 Database, Table I.B1.4.53. See https://stat.link/o1j4k0 for the underlying data.

The use of AI for schoolwork is widespread in most countries and economies (Figure I.4.12), yet almost-daily use remains relatively uncommon (Table I.B1.4.53). On average across OECD countries, 14% of students reported never (or almost never) having used AI for any of the schoolwork-related purposes examined in PISA (Table I.B1.4.55). In 20 countries and economies, a majority of students reported that they never (or almost never) or only about once or twice a year used AI to summarise assigned reading texts (Table I.B1.4.53). Similarly, in 20 countries and economies, more than half of students reported they use AI once or twice a year or less to draft written assignments.

Figure I.4.12. Students' non-use of artificial intelligence for schoolwork

Percentage of students reporting to never or almost never have used AI chatbots for any of the schoolwork-related purposes examined in PISA



Note: *Countries and economies are ranked in descending order of the percentage of students reporting to never or almost never have used AI chatbots for any schoolwork-related purposes examined in PISA.*
Source: OECD, PISA 2025 Database, Table I.B1.4.55. See https://stat.link/o1j4k0 for the underlying data.

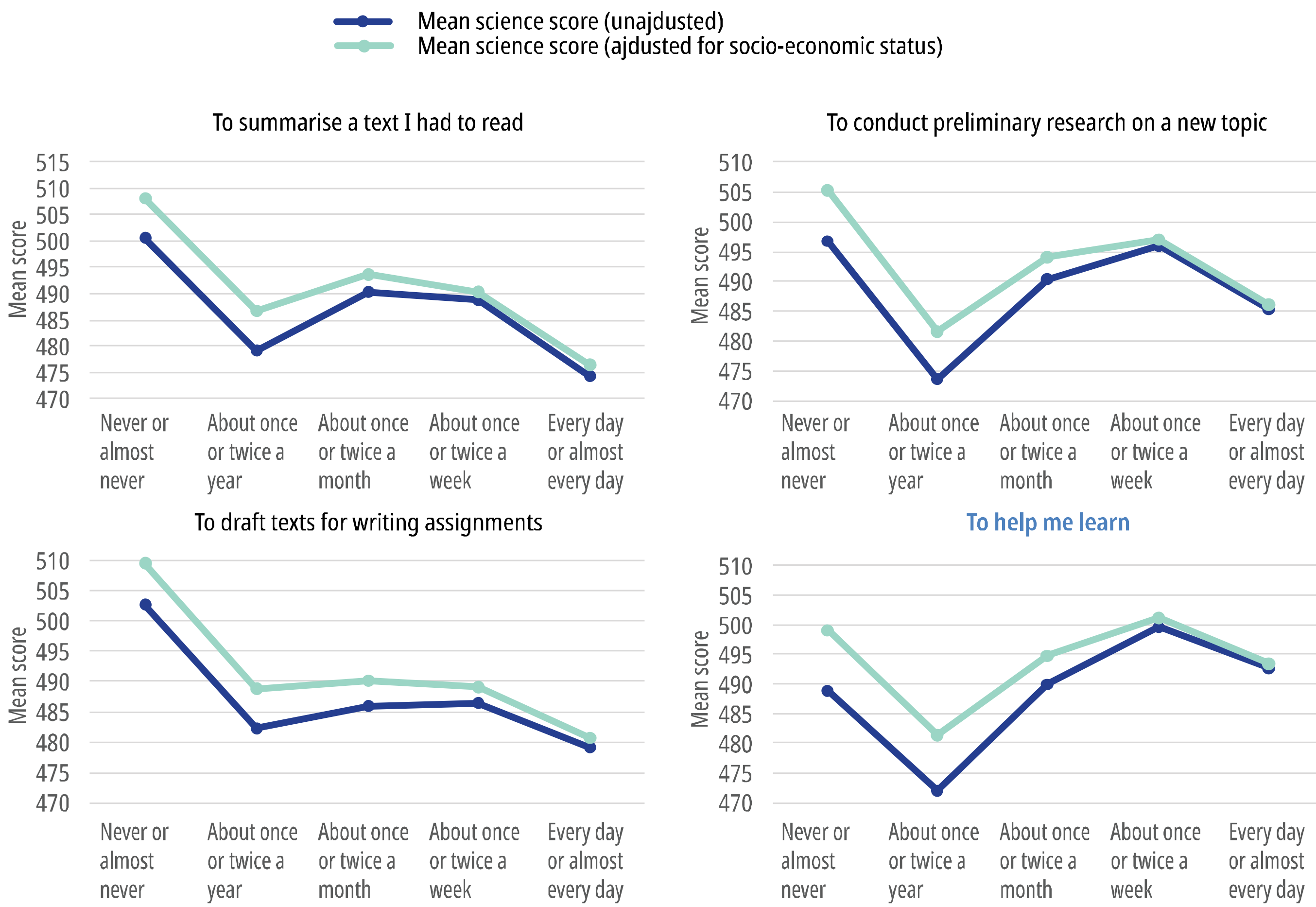
The relationship between AI use and student science performance is complex. Students using AI to help them learn on a weekly basis tend to have similar science performance compared to AI non-users, when accounting for student socio-economic profile (Figure I.4.13). Students using AI to help them learn frequently (almost every day or more) or occasionally (twice a month or less) tend to have lower scores than non-users.

With respect to AI use for specific tasks, non-users of AI tend to outperform users. For tasks such as summarising texts and conducting preliminary research on new topics, moderate users (those using AI between once a month and twice a week) outperform both limited users (twice a year or less) and frequent users (almost every day or more). However, for tasks such as drafting texts for writing assignments, the performance advantage of moderate users is less pronounced.

These relationships do not necessarily imply a negative impact of AI use on science performance, but may reflect a complex mix of who adopts AI and how they use it. It also suggests that moderate and intentional use of AI for schoolwork and learning may be positively related to student performance. See Box I.4.2 for detailed analyses on how schools can potentially support students in more effectively using AI.

Figure I.4.13. Mean score in science, by frequency of AI use for schoolwork

Based on students' reports; OECD average



Note: Mean scores adjusted for socio-economic status are predicted science scores obtained from separate regressions of science performance on the frequency of each type of AI use, after accounting for students' socio-economic status.
Source: OECD, PISA 2025 Database, Table I.B1.4.61. See https://stat.link/o1j4k0 for the underlying data.

Box I.4.2. Assessing AI-generated information as a learning opportunity

On average across OECD countries, around six out of ten students report that they were tasked in their school lessons with assessing the quality of information generated by AI (Table I.B1.4.67), with shares ranging from 31% to more than 80% across countries and economies. Among these students, 46% reported they did so sometimes, around 33% often, and 22% very often. Students appear to have more opportunities in their school lessons to learn and practice how to critically evaluate digital information in general rather than specifically AI-generated content. About eight in ten students report, in their school lessons, they were tasked with assessing the quality of information they find online (Table I.B1.4.67).[15]

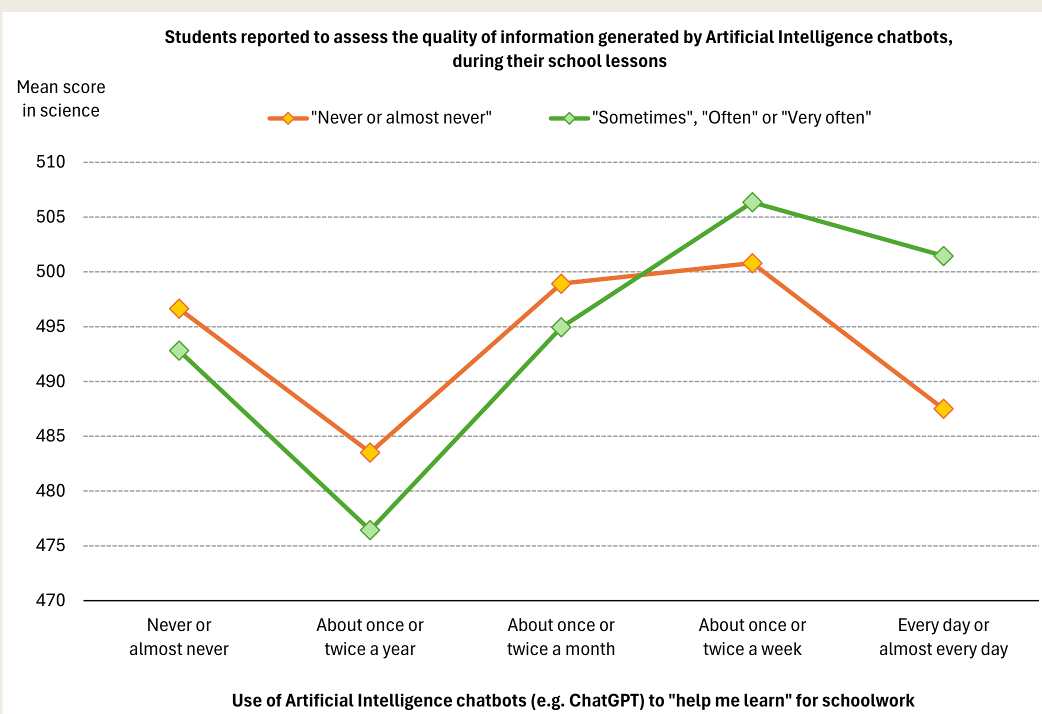
When students have learning opportunities related to AI in school, those who reported using AI to help them learn frequently (once a week or more) tend to slightly outperform their peers, both AI non-users and AI users about twice a month or less. In Figure I.4.14, two green diamonds on the right end are higher than other green diamonds and orange diamonds.

While these results cannot determine causality, they do underscore the potential of targeted instruction for all students to strengthen their critical engagement with AI. They also suggest that simply expanding access to AI tools is unlikely to produce benefits without parallel investments in guidance on appropriate and effective use. Education systems can promote more effective digital and media literacy education, including critical engagement with AI, by providing support such as training and resources to teachers, adopting a cross-sectoral approach to better coordinate media landscapes, and emphasising the use of AI tools that are fit for purpose (Hill, 2022[10]).

It is important to highlight that socio-economically disadvantaged students are less likely to report they are tasked to assess AI-generated information during school lessons (Table I.B1.4.68). This disparity warrants closer examination, along with the implementation of targeted interventions, to prevent the emergence of a new form of socio-economic divide in the age of AI.

Figure I.4.14. Mean score in science, by frequency of AI use “to help me learn” and frequency of assessing AI-generated information in school lessons

Based on students’ reports; OECD average



Source: OECD, PISA 2025 Database, Table I.B1.4.70. See https://stat.link/o1j4k0 for the underlying data.

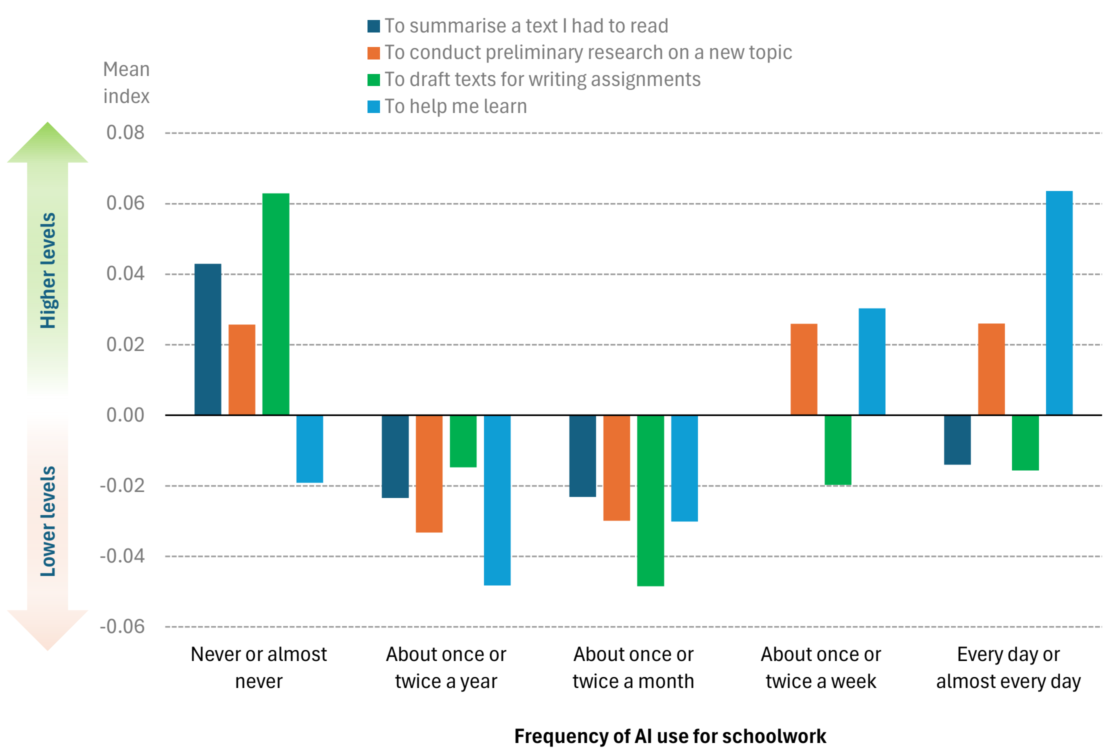
Patterns observed in Figure I.4.13 might be explained by the different characteristics of frequent versus limited (or no) AI use, in terms of student background and learning dispositions. Students who reported not using AI for schoolwork tend to come from more socio-economically disadvantaged backgrounds (Table I.B1.4.55). Limited access to digital devices, stable Internet connections or paid AI tools may restrict opportunities to experiment with or routinely use AI for schoolwork. By contrast, students who use AI more frequently tend to come from more advantaged backgrounds (Table I.B1.4.54), suggesting that regular AI use is partly shaped by differential access and exposure. However, socio-economic background alone does not fully explain the observed performance patterns among users.

Learning-related dispositions are different across AI-use profiles. For task-specific uses (summarising readings, drafting texts and conducting preliminary research), students who report not using AI tend to report higher levels of help seeking than infrequent users. However, among users, help seeking is generally higher among students who use AI weekly or daily (Figure I.4.15). A different pattern emerges when AI is used "to help me learn": in this case, frequent users (weekly or daily) report they seek help more than both non-users and less frequent users.

Levels of intrinsic motivation to learn are generally highest among students who use AI weekly, regardless of the purpose of use. However, similarly high levels are observed among students who do not use AI for some task-specific purposes (such as summarising or drafting), and among daily users who use AI "to help me learn" (see Figure I.4.o5 online).

Figure I.4.15. Help seeking, by frequency of AI use for schoolwork

Mean index of self-regulated help seeking; OECD average



Note: The mean index of self-regulated help seeking for students using AI to summarise a text they had to read about once or twice a week is close to 0, on average across OECD countries.
Source: OECD, PISA 2025 Database, Table I.B1.4.64. See https://stat.link/o1j4k0 for the underlying data.

Curiosity is positively associated with students' use of AI. On average across OECD countries, students who report using AI every day or almost every day, irrespective of the task, tend to also report higher levels of curiosity. Lower levels of curiosity were reported by students who report more limited AI use, however the relationship between curiosity and AI non-use is more mixed (Figure I.4.16). The literature on curiosity and use of AI in students is still limited, however these results underscore there is a need to further explore this association to ascertain whether AI provides additional opportunities for personalised inquiry for students who already exhibit high curiosity, or whether its use can support the development of curiosity.

Figure I.4.16. Curiosity, by frequency of AI use for schoolwork

Mean index of curiosity; OECD average

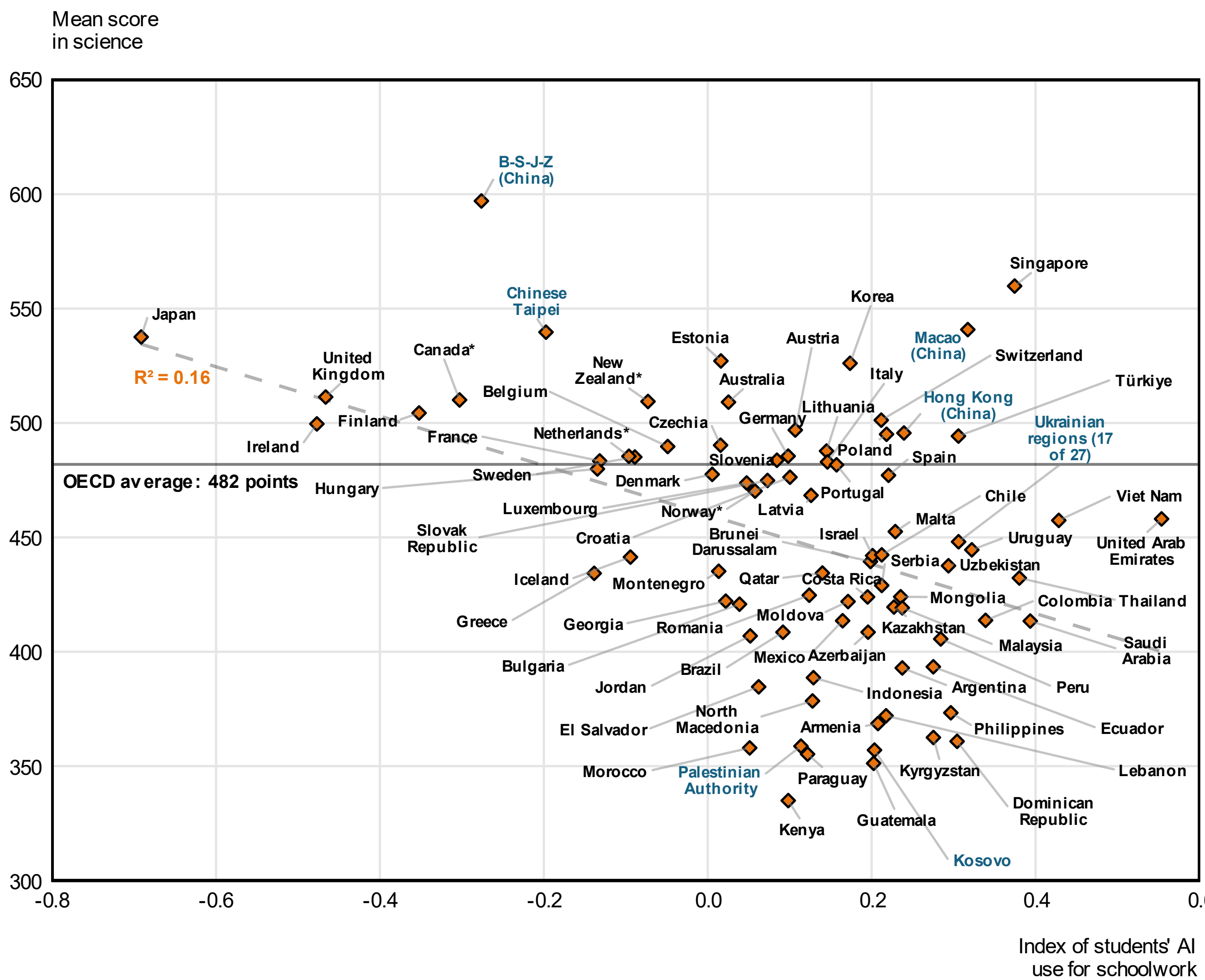
Source: OECD, PISA 2025 Database, Table I.B1.4.65. See https://stat.link/o1j4k0 for the underlying data.

A complementary perspective emerges when examining the relationship between AI use and performance at the system level. Figure I.4.17 shows substantial variation in the frequency of AI use for schoolwork, especially among systems performing above the OECD average.

System-level data collected for PISA 2025 suggest that differences in AI use across high-performing systems may be partly explained by differences in the emphasis of their policies on digital resources and AI. For instance, Korea and Singapore have implemented large-scale, comprehensive policies to foster digital learning, with Singapore explicitly including the use of AI tools. By contrast, Japan and Estonia, where AI is used less frequently for schoolwork, have policies on digital learning that are comparatively less comprehensive in scope. An exception is Chinese Taipei, which, despite having a relatively low average frequency of AI use, has implemented a large-scale policy on digital learning since 2021.

In contrast, systems performing lower than the OECD average show variation in their levels of AI use at school, but the variation is smaller than the variation among higher-performing countries. A possible hypothesis for this would be that systems with lower performance levels have been faster to adopt AI tools as a compensatory strategy. Overall, these findings highlight the importance of policy, guidance and instructional design in shaping effective and pedagogically sound integration of AI into teaching and learning in systems where AI-use for learning is widespread.

Figure I.4.17. Overall level of use of artificial intelligence for schoolwork and mean performance in science



Note: The index of students' AI use for schoolwork (AIUSESCH) combines students' responses to a set of four questions asking how often they use artificial intelligence chatbots (e.g. ChatGPT) for school-related activities. Specifically, students were asked how frequently they use AI chatbots (1) to summarise a text they had to read, (2) to conduct preliminary research on a new topic, (3) to draft texts for writing assignments, and (4) to help them learn. Higher values on the AIUSESCH index reflect a higher overall frequency of students' AI chatbot use for schoolwork.
Source: OECD, PISA 2025 Database, Tables I.B1.4.53 and I.B1.2a.1 (Chapter 2). See https://stat.link/o1j4k0 for the underlying data.

Perceived shortages of education staff and materials

Like with digital resources, PISA data can provide insight into another important dimension of school resources, that of school-level staff and personnel, as well as the material resources available to them. How well systems are doing in raising and allocating financial resources can be partly measured through perceived constraints and shortages of personnel or materials reported by school principals. It is important to note that school principals' responses regarding shortages do not represent absolute measures, as perceptions of what constitutes a shortage may vary across countries and economies.

In 2025, on average across OECD countries, around four out of ten students were in schools where principals reported that instruction was hindered to some extent or a lot by a lack of teachers, and a similar proportion were in schools where a lack of assisting staff was perceived to hinder instruction (Table I.B1.4.71).

On average across OECD countries, principals in 2025 reported fewer teacher shortages than their counterparts did in 2022 (Figure I.4.18). However, in most education systems they are more concerned than principals were in 2018. The decrease was particularly salient in Saudi Arabia, Belgium and Hong Kong (China), where the share of students in schools whose principals reported that a lack of teaching staff hindered instruction at least to some extent fell by over 25 percentage points between PISA 2022 and PISA 2025 (Table I.B1.4.78). This improvement is consistent with the decrease in student-to-teacher ratio observed on average across OECD countries and in 36 countries/economies during the same time period (Table I.B1.4.82). Improved student-to-teacher ratios and (perceived) teacher shortages, however, do not necessarily imply an increase in the number of teachers; they may instead reflect demographic changes, curriculum changes and declining enrolment experienced in some countries and economies.

On average across OECD countries, principals appear to be less concerned about the quality than about the quantity of teaching staff (Table I.B1.4.71). Around one-quarter of students were enrolled in schools where principals reported that instruction was hindered, to some extent or a lot, by inadequate or poorly qualified teaching staff. This share remained stable compared to 2022 on average across OECD countries and also in 46 countries/economies (Table I.B1.4.78).

The overall improvement in teaching staff shortages is nonetheless counterbalanced by deeper concerns over assisting staff shortages. While principals on average across OECD countries reported similar levels of assisting staff shortages in 2022 and 2025, they expressed greater concern about their adequacy and training in the most recent PISA cycle (Figure I.4.o6 (online) and Table I.B1.4.78).

As such, the combined index on education staff shortages increased (worsened) compared to 2022 on average across OECD countries and in 19 countries/economies, confirming the upward trend already initiated in PISA 2018 (Table I.B1.4.77). Still, school principals in 17 countries and economies reported less concern about the lack of teachers and assisting staff than their counterparts did in 2022.

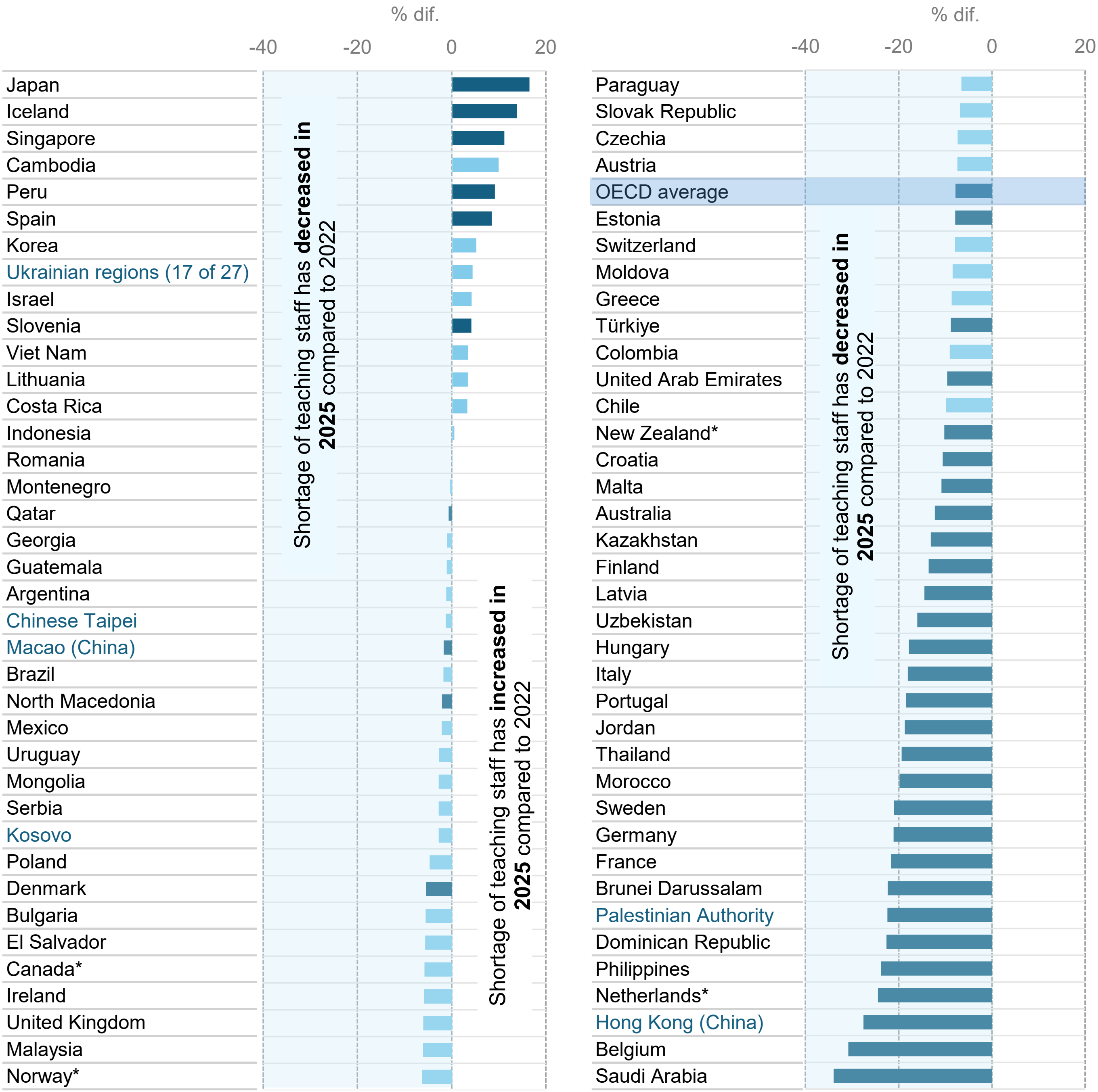
Shortages of education staff are more frequently reported in socio-economically disadvantaged schools than in advantaged schools[16] and in public rather than private schools in most countries and economies, raising concerns about the equitable distribution of human resources (Table I.B1.4.72). Effective learning environments and adequate resourcing can compensate to some extent for social inequalities (Salinas, 2017[11]), therefore resourcing concerns should be addressed in all schools, especially the most disadvantaged.

PISA also asked principals about the lack or inadequacy of material resources, such as textbooks, libraries, laboratory material and buildings. On average across OECD countries, more than one-quarter of students attended schools whose principals indicated that a lack of material resources hindered instruction at least to some extent, and around one-third were in schools where lack of physical infrastructure was perceived to hinder instruction (Table I.B1.4.83).

Principals in 2025 reported more shortages of material resources than did those in 2022, on average across OECD countries and in 16 countries/economies. However, a similar number of education systems recorded improvements (Table I.B1.4.89). This overall increase of material shortages partially offsets the improvement observed between PISA 2018 and 2022, though the (perceived) availability of material resources remains above 2018 levels, on average across OECD countries and in 35 countries/economies.

Figure I.4.18. Changes between 2022 and 2025 in shortages of teaching staff

Percentage-point change in students whose principals reported that the school's capacity to provide instruction is hindered to some extent or a lot by a lack of teaching staff

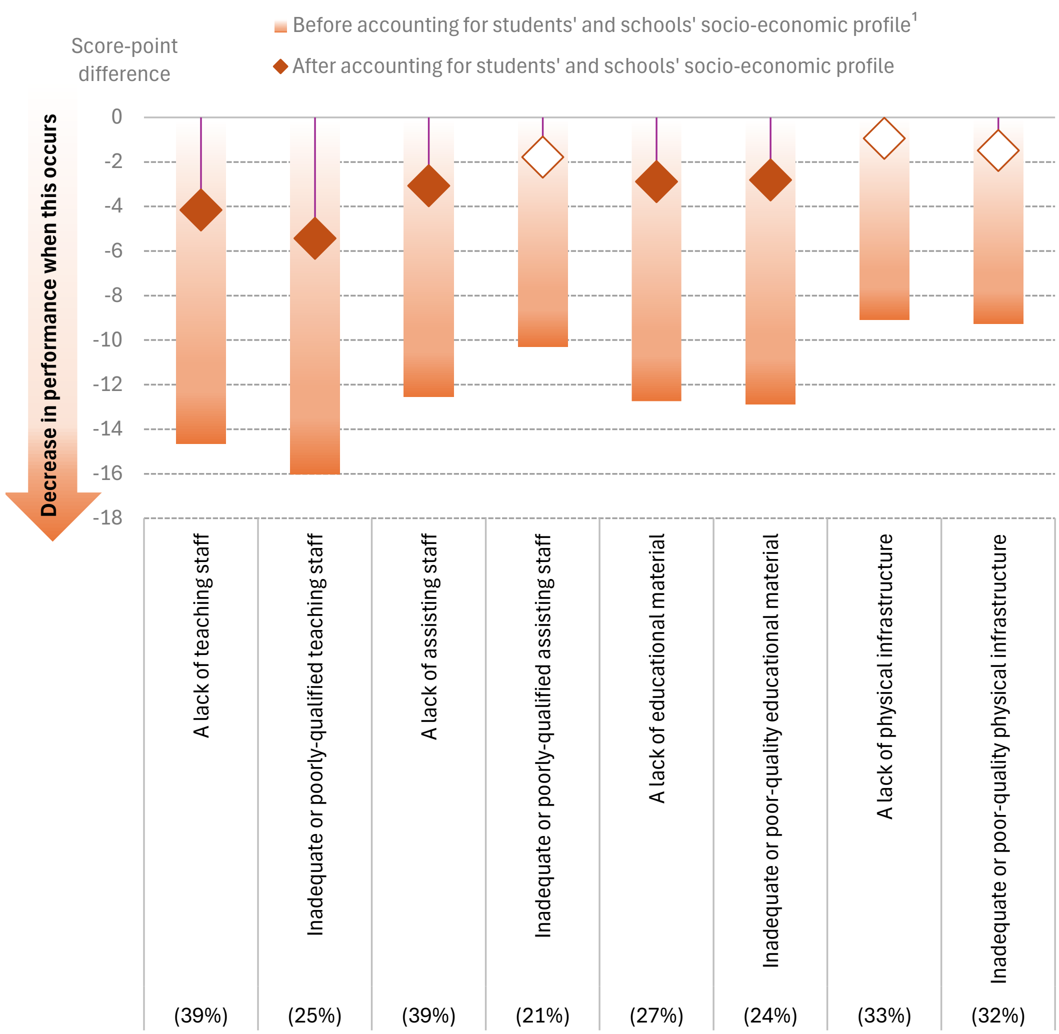


Notes: Only countries and economies with available data are shown.
Statistically significant differences between PISA 2022 and PISA 2025 (PISA 2025 - PISA 2022) are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the change in the percentage of students whose principals reported that the school's capacity to provide instruction is hindered to some extent or a lot by a lack of teaching staff between 2022 and 2025.
Source: OECD, PISA 2025 Database, Tables I.B1.4.78 and I.B1.4.90. See https://stat.link/o1j4k0 for the underlying data.

Results in Figure I.4.19 (and Table I.4.1) show that students score lower in science when their principals report greater shortages of material and human resources. However, these relationships weaken and even disappear in many education systems after accounting for students' and schools' socio-economic profile.

Figure I.4.19. Shortage of education staff and material resources, and science performance

Change in science performance associated with principals reporting that the school's capacity to provide instruction is hindered to some extent or a lot by the following factors; OECD average



1. The socio-economic profile is measured by the PISA index of economic, social and cultural status.
Statistically significant score-point differences are shown in a darker tone.
All score-point differences are statistically significant before accounting for students' and schools' socio-economic profile (see Annex A3).
Educational material includes textbooks, ICT equipment, library, laboratory material, etc. Physical infrastructure includes school building, grounds, heating/cooling systems, lighting and acoustic systems, etc.
Percentage of students in schools where school's capacity to provide instruction is hindered to some extent or a lot by the following is shown in parentheses.
Source: OECD, PISA 2025 Database, Tables I.B1.4.71, I.B1.4.79, I.B1.4.83 and I.B1.4.91. See https://stat.link/o1j4k0 for the underlying data.

Learning outside of regular instruction time

The amount of time that students are engaged in learning activities is another important resource that can influence performance and academic success. Learning activities are not limited to regular instruction time but also include homework time and additional instruction students might choose to follow. Homework is assigned for various reasons, such as ensuring information is stored in students' long-term memory or helping struggling students learn the material covered in class. While time is essential for learning within and outside of the classroom, increasing learning time alone is not enough to improve students' outcomes.

Students in 2025 report spending around 1.4 hours per day on their homework on average across OECD countries, ranging from less than 1 hour to 2.5 or more hours in Zambia, Azerbaijan, Mauritius, Mongolia and Rwanda (Table I.B1.4.93).

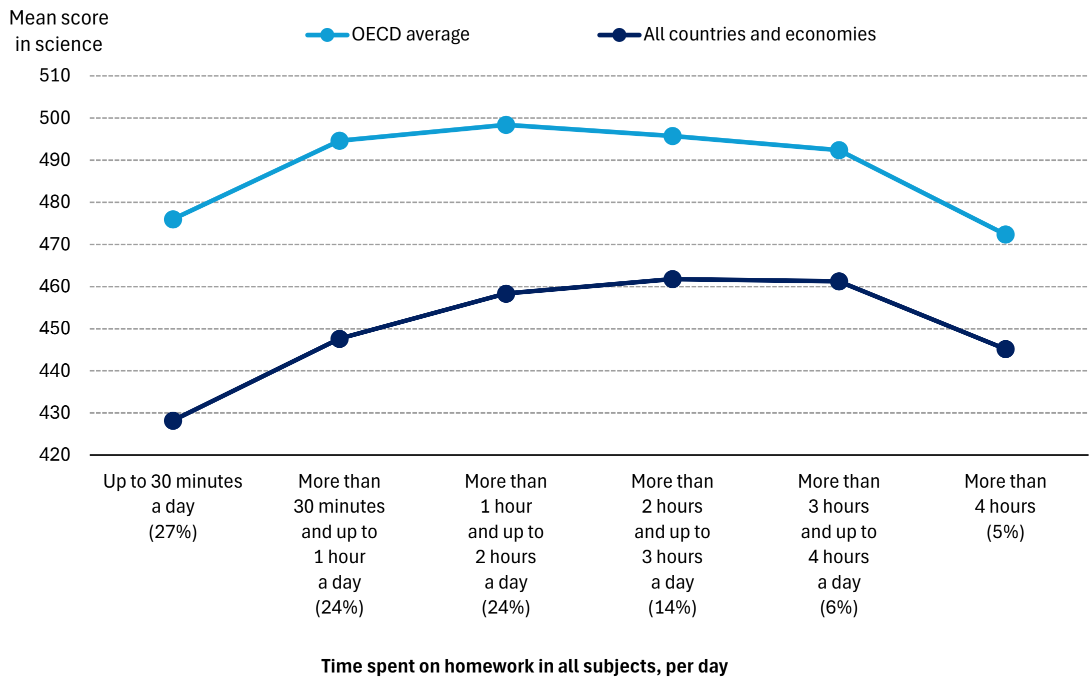
Time students spend on their homework has decreased on average across OECD countries by about 10 minutes per day, representing a 11% decline compared to 2022 (Table I.B1.4.96). This drop is observed in nearly all education systems with available data and is driven by a 6 percentage-point decrease in the proportion of students spending more than 2 hours per day on their homework in a typical school week. A similar decrease is observed when looking specifically at science homework[17] (Table I.B1.4.97).

The relationship between time spent on homework and student performance follows an inverted U-shape (Figure I.4.20, Table I.B1.4.98), where up until a threshold (in this case 2 hours per day), time spent on homework is associated with increased science performance, while more time spent on homework is associated with lower performance. This is consistent with previous PISA results (OECD, 2023[8]). This does not necessarily indicate that homework time negatively affects students' performance; rather, it may reflect a situation in which lower-performing students spend more time on homework due to additional assignments and/or a need for more time to complete given tasks than their higher-performing peers. This could imply the need to make students' learning time in school more productive, in particular for lower-performing students.

Students who report spending more time on their homework are more likely to report higher levels of engagement in learning, which is discussed in detail in Chapter 3. For example, positive relationships are observed with curiosity, perseverance and goal setting in nearly all countries/economies and with help seeking in 55 countries and economies, after accounting for students' and schools' socio-economic profile (Table I.B1.4.100). By contrast, total homework time shows no clear association with students' sense of belonging at school in most countries/economies.

Figure I.4.20. Total time spent on homework (all subjects) and science performance

Based on students' reports; OECD and all countries and economies averages

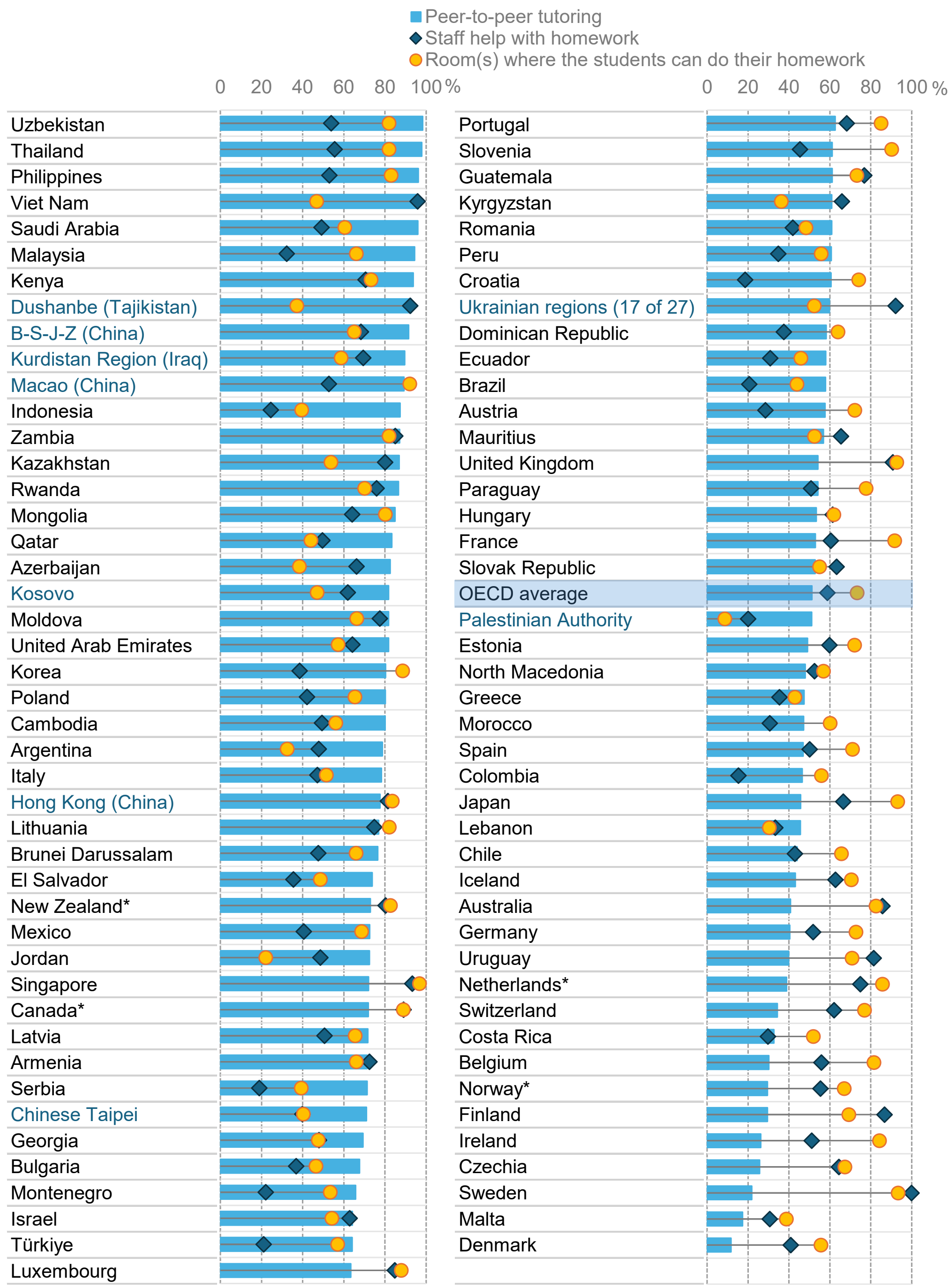


Notes: Differences between categories are all statistically significant (see Annex A3).
Percentage of students per time spent on doing homework in all subjects per day is shown in parentheses (OECD average).
Source: OECD, PISA 2025 Database, Tables I.B1.4.93 and I.B1.4.99. See https://stat.link/o1j4k0 for the underlying data.

Outside of regular learning time, schools can provide study help to students in different ways (Figure I.4.21). Providing adequate spaces where students can do their homework is relatively widespread, which is important for students, in particular the most disadvantaged, who may lack a quiet place to do their homework at home. Other forms of study support such as peer-to-peer tutoring and staff help with homework are, on average, less prevalent across OECD countries.

Figure I.4.21. Study help provision in schools

Percentage of students enrolled in schools whose principals reported that the following types of study help are provided



Countries and economies are ranked in descending order of the percentage of students enrolled in schools whose principals reported that their school provided peer-to-peer tutoring.

Source: OECD, PISA 2025 Database, Table I.B1.4.101. See https://stat.link/o1j4k0 for the underlying data.

Study help provision may depend in part on factors such as school needs, financial means and students' initial performance. This may potentially explain varying relationships between different types of study help and science performance. Providing spaces for students to complete their homework and peer-to-peer tutoring are positively related to science performance on average across OECD countries. Staff help with homework appears, however, negatively associated with science performance in 20 countries/economies (Table I.B1.4.102). This could be indicative of reverse causality, in the sense that schools provide additional staff support to students who are struggling. After accounting for schools' and students' socio-economic profile, the relationships for all types of study help and science performance weaken and disappear in most countries and economies. No relationships are observed between study help provision and attitudes towards learning, including curiosity, perseverance and sense of belonging, in most countries and economies (Table I.B1.4.103).

Students may also receive additional school science instruction through individual, group or online tutoring and classes, and this instruction may happen at school or outside of school premises. On average across OECD countries, around 60% of students participate in at least one type of additional school science instruction, ranging from 34% in Belgium to 97% in Viet Nam (Tables I.B1.4.104 and I.B1.4.105). This additional instruction is predominantly undertaken through video-recorded lessons or online platforms (reported by 37% of students on average across OECD countries), followed by individual or group on-site tutoring (respectively used by 27% and 30% of students on average). Group real-time online lessons are less prevalent overall, with 17% of students participating in such additional instruction on average (ranging from 5% in Korea and Japan, to 54% in Viet Nam and Indonesia).

Additional science instruction outside of regular school hours appears primarily undertaken by low-performing students in most PISA-participating countries and economies (Table I.B1.4.106). The reverse is, however, observed in some systems, suggesting additional science instruction might be used in those contexts for an enrichment purpose. Socio-economically advantaged students have higher participation rates in additional school science instruction than their disadvantaged peers on average across OECD countries and in half of countries/economies with available data (Table I.B1.4.105). This unequal access to additional instruction/support may increase existing inequalities in some countries/economies.

Relationships with teachers and families

Beyond the resources available to schools, supportive relationships with teachers and families play a central role in shaping students' academic outcomes, well-being and attitudes towards learning. Research consistently supports the idea that healthy relationships are good for people and that social connection is one of the strongest predictors of positive outcomes in adolescence and later in life, whereas social disconnection increases one's vulnerability to adverse health and socio-economic risks (Burns and Gottschalk, 2019[12]).

Teacher support in science lessons

Teacher support refers to the help and encouragement that teachers offer their students such as showing an interest in every student's learning, giving extra help when needed and continuing to teach until students understand. Teacher support can make it easier for students to accomplish tasks and succeed academically, and it supports their social and emotional development (OECD, 2025[13]). PISA 2025 data indicate that, on average across OECD countries and in around half of the PISA-participating countries/economies teacher support in science lessons have increased since 2015 (Figure I.4.22). As for individual countries and economies, Korea, Japan, Indonesia, Croatia, the Slovak Republic, Thailand and Viet Nam experienced the largest increases in reported levels of teacher support.

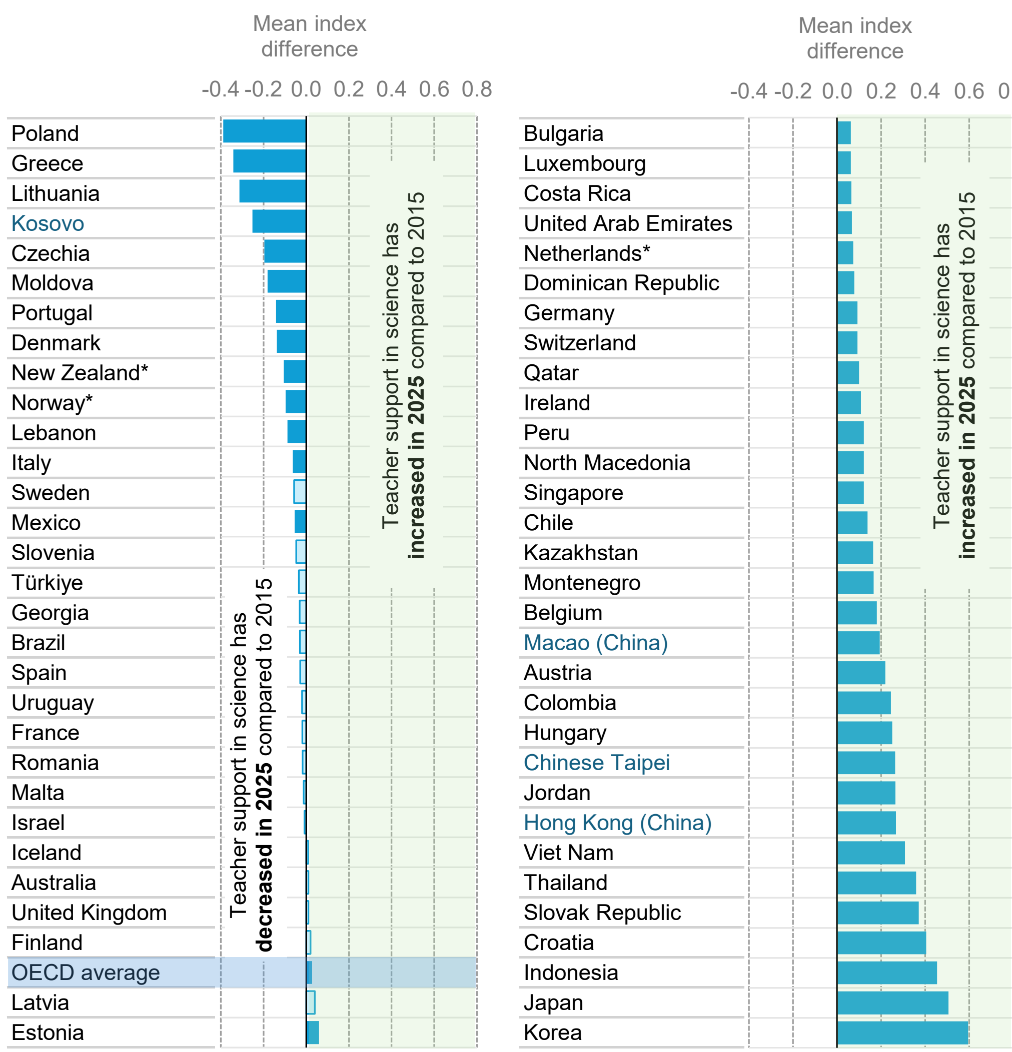
These positive trends appear to be primary driven by an increase in the percentage of students reporting that their science teacher helps them regularly with their learning and gives them an opportunity to express opinions (Table I.B1.4.116). For instance, 72% of students in 2015 reported that their science teacher helps students with their learning compared to 75% in 2025, on average across OECD countries.

Despite the overall improvement in teacher support since 2015, fewer students in 2025, on average across OECD countries and in 37 countries/economies, reported that their science teacher continues teaching until they understand in most of every lesson. Importantly, systems where the share of students reporting the above statement decreased the least, or even increased, showed more stable science performance since 2015 (Table I.B1.4.189), even after accounting for changes in GDP per capita.

Across OECD countries, most students reported receiving regular support from their science teachers in 2025, although the prevalence of supportive practices varies substantially across education systems (Table I.B1.4.113). While in 17 countries/economies, more than 85% of students reported that their teacher gives extra help when students need it in most or every science lesson, less than two-thirds reported this practice in 10 countries/economies.

Figure I.4.22. Change between 2015 and 2025 in reported teacher support in science

Difference in the index of teacher support in science (PISA 2025 - PISA 2015)

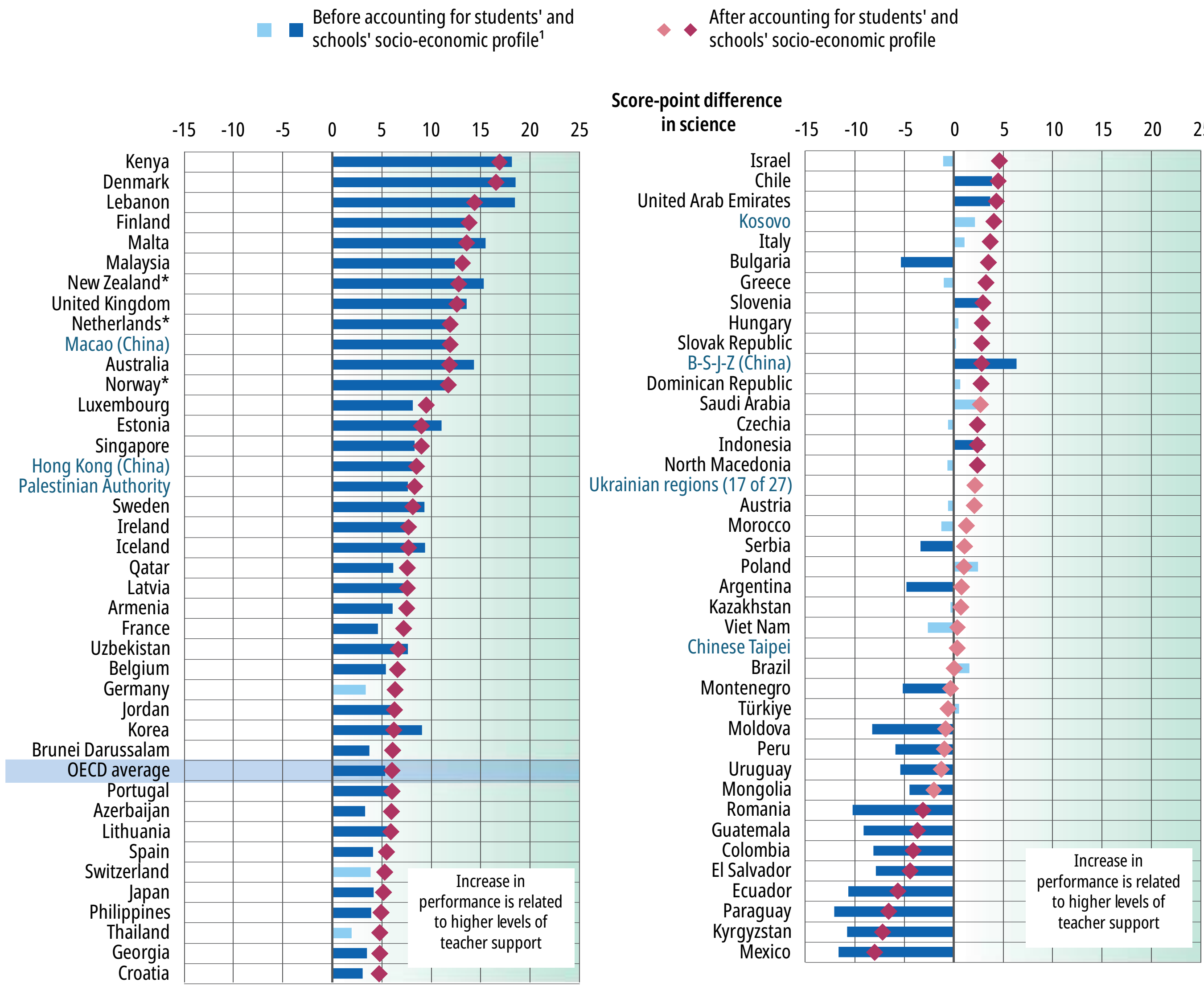


Notes: Statistically significant differences between PISA 2015 and PISA 2025 (PISA 2025 - PISA 2015) are shown in a darker tone (see Annex A3).
This index is based on students' perceptions of teacher support in science lessons, by reporting how often ("every lesson", "most lessons", "some lessons" or "never or hardly ever") their science teacher shows an interest in every student's learning; gives extra help when students need it; helps students with their learning; continues teaching until the students understand; and gives students an opportunity to express opinions. The index of teacher support was standardised in 2015 to have a mean of 0 and a standard deviation of 1 across OECD countries.
Countries and economies are ranked in ascending order of the change in the index of teacher support in science.
Source: OECD, PISA 2025 Database, Table I.B1.4.115. See https://stat.link/o1j4k0 for the underlying data.

Associations between teacher support in science lessons and science performance are generally positive, and these associations become even stronger after accounting for students' and schools' socio-economic profile. In about 56 countries/economies, and also on average across OECD countries, the relationship is positive even after adjusting for socio-economic profile[18] (Figure I.4.23).

Figure I.4.23. Teacher support in science and science performance

Change in science performance associated with a one-unit increase in the index of teacher support, before and after accounting for students' and schools' socio-economic profile



1. The socio-economic profile is measured by the PISA index of economic, social and cultural status (ESCS).
Statistically significant differences in science performance are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the change in science performance associated with a one-unit increase in the index of teacher support, after accounting for students' and schools' socio-economic profile.
Source: OECD, PISA 2025, Table I.B1.4.117. See https://stat.link/o1j4k0 for the underlying data.

However, the relationship between science performance and teacher support reverses when system-level correlations are examined. Countries and economies with higher levels of teacher support are more likely to have a lower average science performance, even after accounting for GDP per capita. Changes in teacher support and science performance since 2015 also show no clear association at the system level[19] except when students are asked if their science teacher continues teaching until the students understand or gives students an opportunity to express opinion (Tables I.B1.4.188 and I.B1.4.189). This negative association with science performance needs to be interpreted with caution as it could be simply signalling a compensatory mechanism: teachers provide greater support whenever they encounter struggling students (OECD, 2025[13]).

As for other student outcomes, greater teacher support is consistently associated with more positive student attitudes towards learning and higher levels of students' sense of belonging (Table I.B1.4.118). These relationships are observed in nearly all countries/economies, even after accounting for students' and schools' socio-economic profile.

Family support

Parents' and guardians' engagement with schools and with their children's learning plays an important role in shaping students' education, not only through the formation of skills and attitudes towards learning but also through their influence on educational expectations (Box I.4.3).

On average across OECD countries, most students report discussing their education with their parents or guardians at least once or twice per week, with large disparities both in terms of discussion subject prevalence and across countries (Table I.B1.4.120). While more than 70% of students report discussing what they did at school at least once per week with their parents across OECD countries, ranging from 37% in Cambodia to 83% in Ireland, only 46% have regular discussions on problems they might have at school.

Higher levels of family support are consistently associated with higher science performance and more positive attitudes towards learning in nearly all countries/economies (Tables I.B1.4.124 and I.B1.4.125). These positive associations remain after accounting for students' and schools' socio-economic profile, though they decrease in magnitude for science performance, indicating that family support partly reflects broader socio-economic advantages.[20]

Box I.4.3. How do parental and peer expectations shape higher education aspirations?

Around 40% of the socio-economic difference in higher education aspirations can be accounted for by gaps in parental expectations

PISA 2025 data show that socio-economically disadvantaged students are less likely to aspire to higher education than their advantaged peers across almost all countries and economies, even after accounting for their performance (Table I.B1.4.119).[21] This pattern holds in almost all countries and economies among both high-achieving and low-achieving disadvantaged students, who are, on average, respectively 20 and 28 percentage points less likely to aspire to higher education compared to advantaged students with comparable science performance.

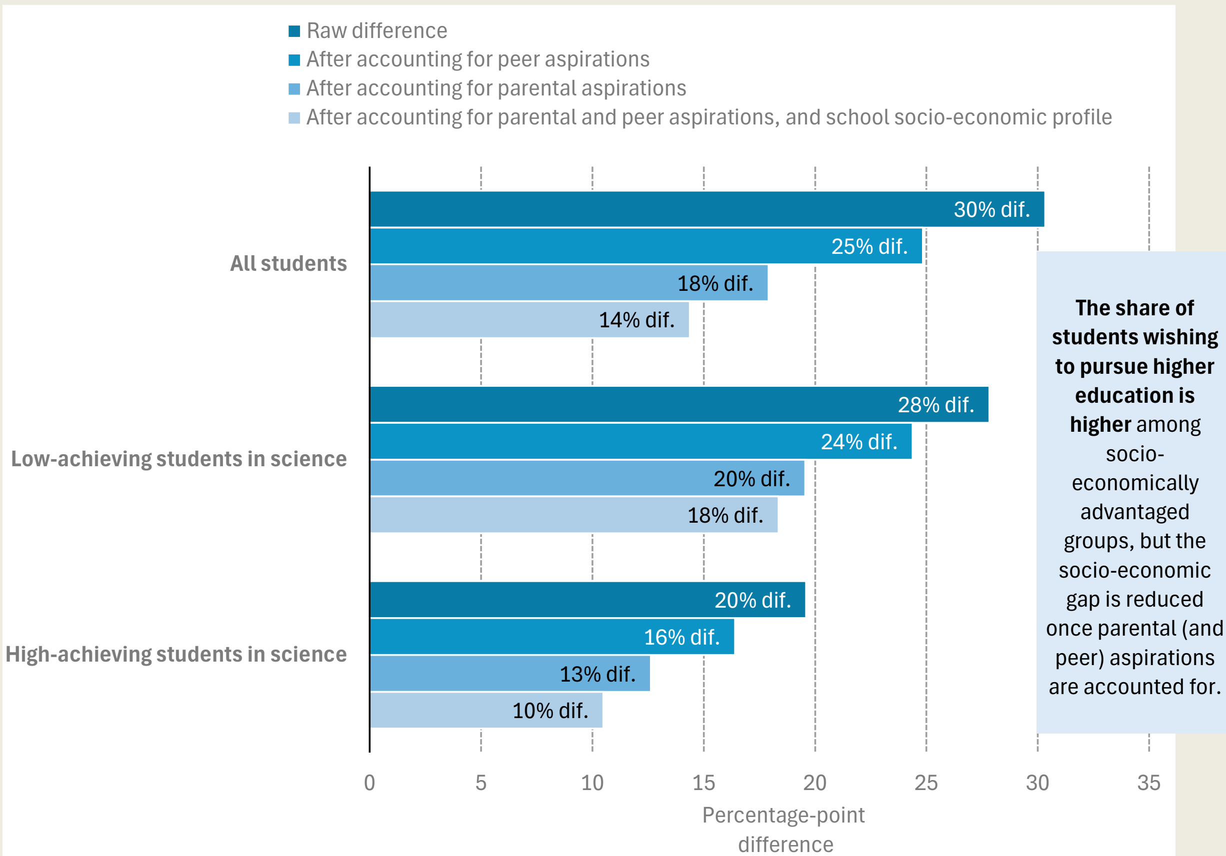
Such gaps in educational aspirations are concerning because they may influence students' educational choices, effort and engagement that are closely linked to longer-term outcomes. Lower aspirations among disadvantaged students may therefore limit their educational investment and engagement, and contribute to the persistence of socio-economic inequalities.

PISA 2025 introduced new questions for students to provide new insights into the social mechanisms underlying socio-economic differences in post-secondary aspirations. Students were asked about their perceptions of their parents' educational expectations and of their peers' expected educational attainment. Families and relatives may indeed play a central role in forming students' aspirations, through comparison with peers and identification of educational pathways prevalent in their social context.[22]

On average across OECD countries, the socio-economic gap in higher education aspirations is reduced by 40% when accounting for parental aspirations (Figure I.4.24). Interestingly, accounting further for peer aspirations as well as school socio-economic profile does not reduce much further the socio-economic gap in higher education aspiration for either high- or low-achieving students. While the direction of causation between the different indicators cannot be established, PISA 2025 evidence points towards the vital role of parents in shaping their children's educational expectations.

Figure I.4.24. Socio-economic gap in higher education aspirations and parental and peer aspirations

Difference between advantaged and disadvantaged students in the proportion wishing to pursue higher education, by performance in science; OECD average

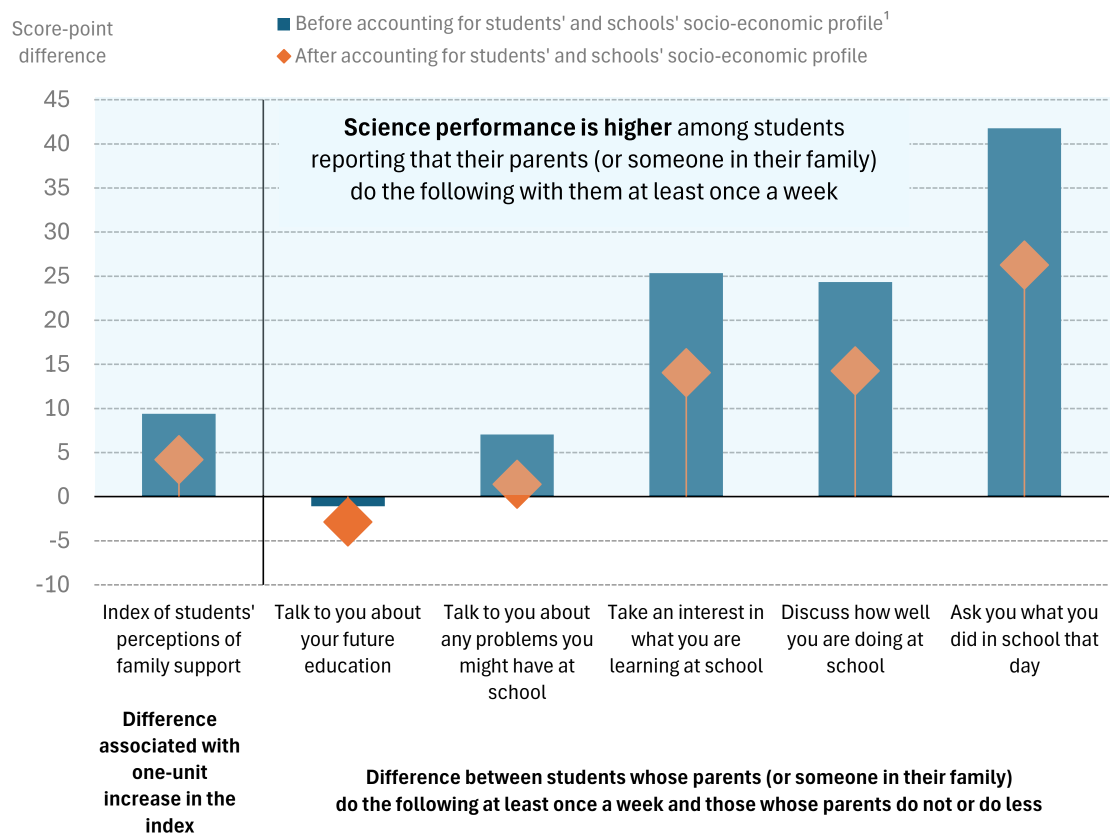


Notes: All differences between advantaged and disadvantaged students are statistically significant (see Annex A3).
A socio-economically advantaged (disadvantaged) student is a student in the top (bottom) quarter of the PISA index of economic, social and cultural status (ESCS) in his or her own country/economy.
High-achieving students are those whose science performance places them in the top quarter of the performance distribution within their country or economy, while low-achieving students are those in the bottom quarter.
Parental aspirations are measured with a dummy equal to one if students declare their parents expect them to pursue higher education.
Peer aspirations controls include a dummy equal to one if students declare their schoolmates are expecting to pursue higher education.
Source: OECD, PISA 2025 Database, Table I.B1.4.119. See https://stat.link/o1j4k0 for the underlying data.

Interestingly, the positive association between family support and science performance is primarily driven by parental interest in students' day-to-day life, namely what they did and learned and how well they are doing at school, rather than discussions related to future education, which appear negatively associated with science performance across OECD countries (Figure I.4.25). This negative relationship might be driven by the willingness of low-performer parents to motivate their children for their studies by emphasising what future returns it could bring them. Discussions about future education might also happen more frequently among low-performing students in case of uncertainty, risk of failure or important decisions about educational pathways.

Figure I.4.25. Family support and science performance

Change in science performance associated with a one-unit increase in family support index and by items; OECD average



1. The socio-economic profile is measured by the PISA index of economic, social and cultural status.
All values are statistically significant (see Annex A3).
The family support index is based on students' reports of whether their parents or guardians show interest in their learning, discuss school activities with them and talk about their future education.
Source: OECD, PISA 2025 Database, Table I.B1.4.124. See https://stat.link/o1j4k0 for the underlying data.

Students in 2025 reported lower levels of family support than students in 2022 on average across OECD countries and nearly all participating countries/economies (Figure I.4.26). For example, in 2022, 77% of students reported that their parents or guardians ask them what they did in school that day at least once a week, but it decreased to 71% in 2025. A decline is observed in almost all countries and economies (Table I.B1.4.123).

The drop in family support is particularly visible among boys and disadvantaged students, with widening gender gaps in 42 countries/economies and greater socio-economic gaps in 14 countries/economies (Table I.B1.4.122).

Interestingly, this overall decrease in family support did not translate into reduced parental engagement in school activities, as reported by school principals (Table I.B1.4.126). The share of students in schools where principals reported that a majority of parents or guardians discuss their child's progress with a teacher – either on their own initiative or at the teacher's request – increased by 3 percentage points compared to 2022 on average across OECD countries (to 33% and 54%, respectively), while many countries and economies showed no significant changes. The participation in local school government or volunteering in physical or extracurricular activities remained at similar levels as those observed in 2022 in most countries and economies, always according to school principals.

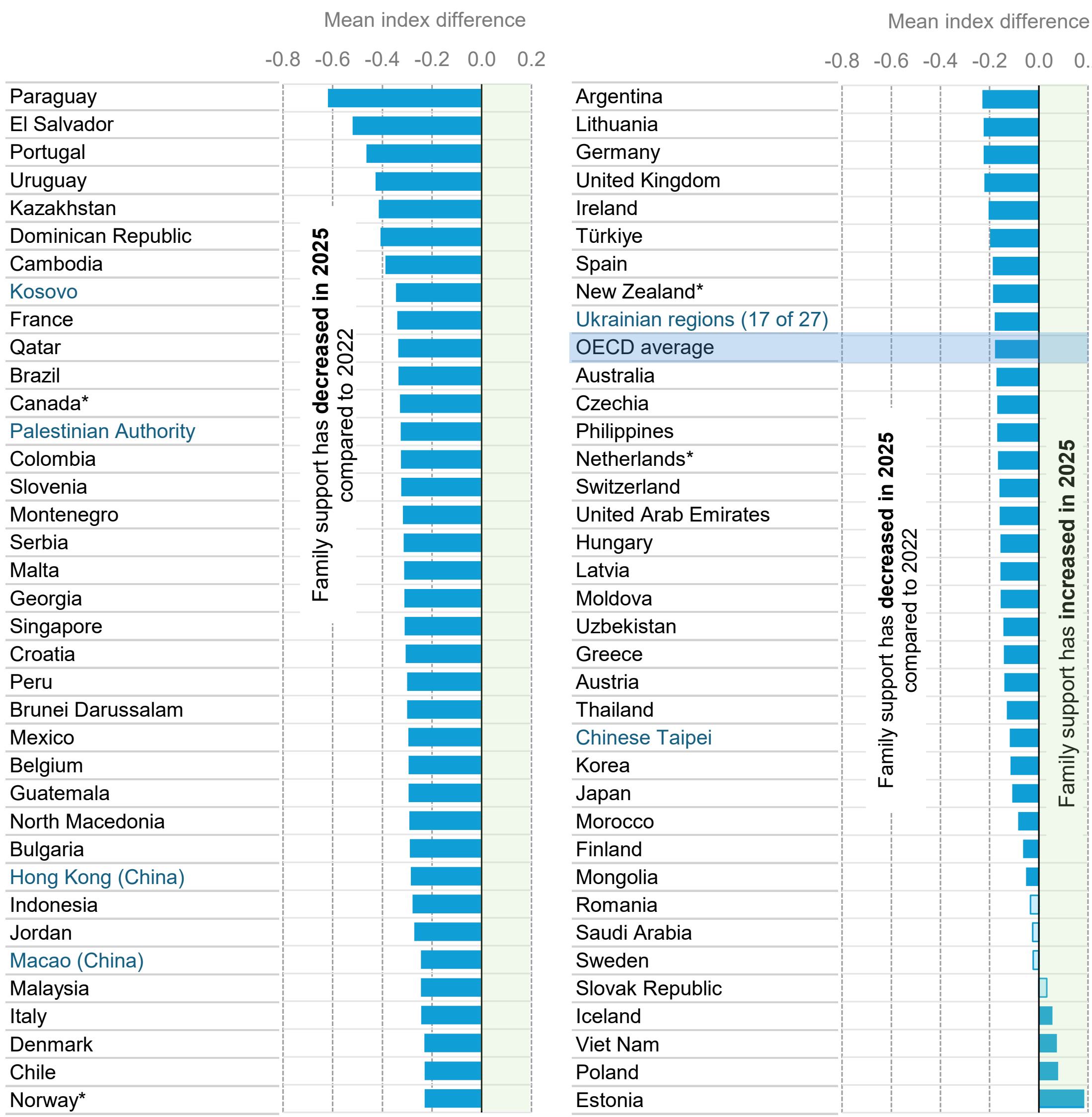
Furthermore, school-level policies that encourage parental engagement in school activities are associated with higher levels of involvement in school activities, but not with students' perceptions of family support (Table I.B1.4.130).

These diverging results suggest that students' perceptions of family support mainly reflect day-to-day interactions, whereas parental involvement in school activities is more occasional, more structured, and may also be shaped by cultural norms. These two indicators thus capture distinct dimensions of parental involvement.

Finally, although PISA data do not allow the reasons underlying the stability of parental or guardian involvement in school activities to be disentangled, it is worth noting that these school-level policies have remained relatively stable in a majority of countries and economies, while increasing in 24 countries and economies (Table I.B1.4.128). Looking beyond these forms of involvement, inter-generational dynamics provide further insight into how family background shapes students' longer-term outcomes (see Box I.4.4).

Figure I.4.26. Change between 2022 and 2025 in family support

Difference in the index of family support (PISA 2025 - PISA 2022)



Notes: Statistically significant differences between PISA 2022 and PISA 2025 (PISA 2025 - PISA 2022) are shown in a darker tone (see Annex A3).
Countries and economies are ranked in ascending order of the change in the index of family support.
Source: OECD, PISA 2025 Database, Table I.B1.4.122. See https://stat.link/o1j4k0 for the underlying data.

Box I.4.4. Inter-generational transmission of occupation and education

High levels of inter-generational educational and occupational mobility signal greater equality of opportunity, as they reflect a weaker influence of socio-economic status on individual outcomes. Educational mobility refers to changes in individual's educational attainment relative to parents, encompassing upward, downward or no mobility. Occupational mobility similarly captures changes in occupational status across generations.

PISA 2025 offers a unique, forward-looking perspective on this topic by examining students' educational and occupational expectations for the future. Students were asked to report their parents' educational attainment and occupation, and the highest educational qualification and occupation (at age 30) they expected to obtain.

How students view educational and occupational mobility

In terms of educational mobility, PISA 2025 finds that, on average across OECD countries, 23% of students expect to attain a higher level of education than their parents, 15% a lower level and 61% expect to attain the same level (Table I.B1.4.131). Students in Morocco, Cambodia, Türkiye and the Kurdistan Region (Iraq) are the most optimistic, with 3 in 5 students or more expecting to attain a higher level of education than their parents. In Norway*, Finland and Denmark, by contrast, 1 in 4 students or more expected downward mobility, the highest share amongst all participating countries and economies.

When it comes to occupational mobility, on average across OECD countries, 37% of students expect to work in higher occupational groups than their parents, 31% of students expect to work in similar occupational groups than their parents, and 31% expect to work in lower occupational groups (Table I.B1.4.131). Students in Morocco, Colombia and Cambodia reported the highest expected upward occupational mobility (70% or more), while students in Qatar reported the lowest (less than 20%). As for downward occupational mobility, the lowest share was observed in Peru (less than 10%), while the highest share was observed in Norway*, Australia, Denmark, Sweden, New Zealand*, Iceland and Singapore (more than 40%).

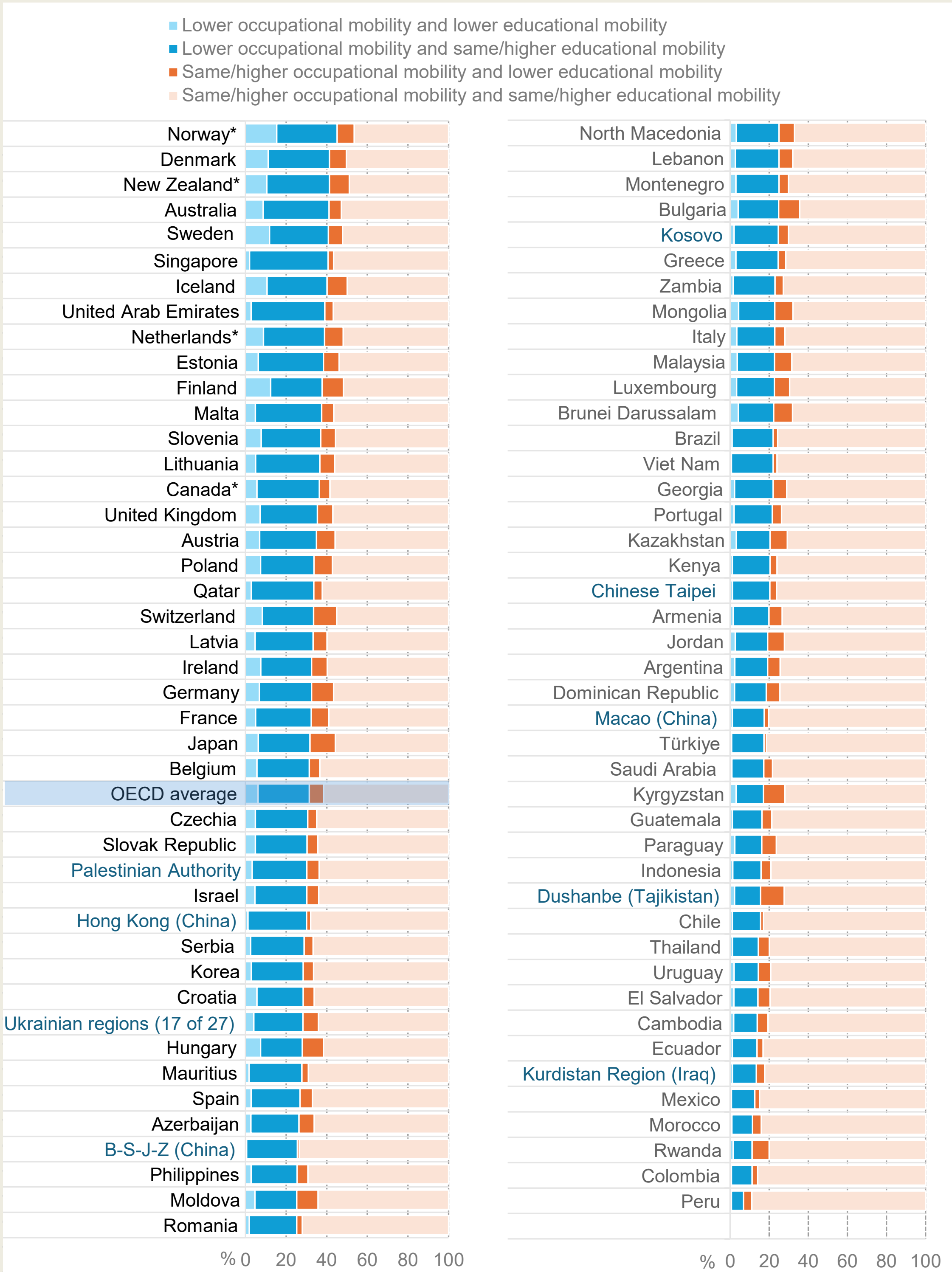
How inter-generational educational and occupational mobility compare

Although closely related, these dimensions do not necessarily evolve in parallel. Educational expansion has increased upper educational mobility in many countries, while occupational mobility has remained comparatively stable. This divergence has raised concerns about a growing disconnect between education and labour-market rewards (Corak, 2013[14]; OECD, 2025[15]). This mismatch has important policy implications. If higher education no longer guarantees improved occupational prospects, young people may lose confidence in education as a pathway to social advancement. Such perceptions can influence motivation, engagement and educational choices well before labour-market entry, ultimately reinforcing the influence of family background in shaping life chances.

On average across OECD countries, more than 60% of students remain optimistic and aligned in expectations in stable or upward educational and occupational mobility, anticipating that their educational progress will translate, already at age 30, into similar or better occupational outcomes (Figure I.4.27). Still, 1 in 4 students expect stable or upward educational mobility with downward occupational mobility. Students in the United Arab Emirates and Singapore are especially pessimistic about their occupational prospects as more than 35% of students expect downward occupational mobility despite stable or upward educational mobility. By contrast, in Rwanda and Peru, 10% of students or less hold this view (10% and 6%, respectively).

Figure I.4.27. Students' educational and occupational expectations

Percentage of students who reported the following regarding educational and occupational expectations



Note: *Countries and economies are ranked in descending order of the percentage of students who report low occupational mobility.*
Source: OECD, PISA 2025 Database, Table I.B1.4.131. See https://stat.link/o1j4k0 for the underlying data.

School climate

The quality of school climate matters for students' learning, as it can influence students' attitudes towards learning and their academic success. Safe and orderly school climates that actively prevent bullying and promote regular attendance contribute to environments in which students are more likely to engage with learning and perform well. This section examines three key aspects of school climate in PISA 2025: disciplinary climate in science lessons,[23] bullying and cyberbullying, and student truancy.

Disciplinary climate in science lessons

In addition to the instructional support provided by teachers, learning in a positive and well-structured climate is important for students' learning. PISA 2025 asked students to report how often their science lessons are disrupted due to classmates not listening to the teacher, the presence of noise and disorder, the time teachers must spend waiting for students to settle down, students' difficulty in working effectively, and delays in students beginning their work after the lesson has started.[24]

The disciplinary climate in science lessons has improved since 2015 on average across OECD countries and in 37 countries/economies (Table I.B1.4.134). Such improvements are especially remarkable in Korea and Croatia, driven by rises in all indicators of disciplinary climate (Table I.B1.4.135). By contrast, the disciplinary climate deteriorated in 10 countries/economies.

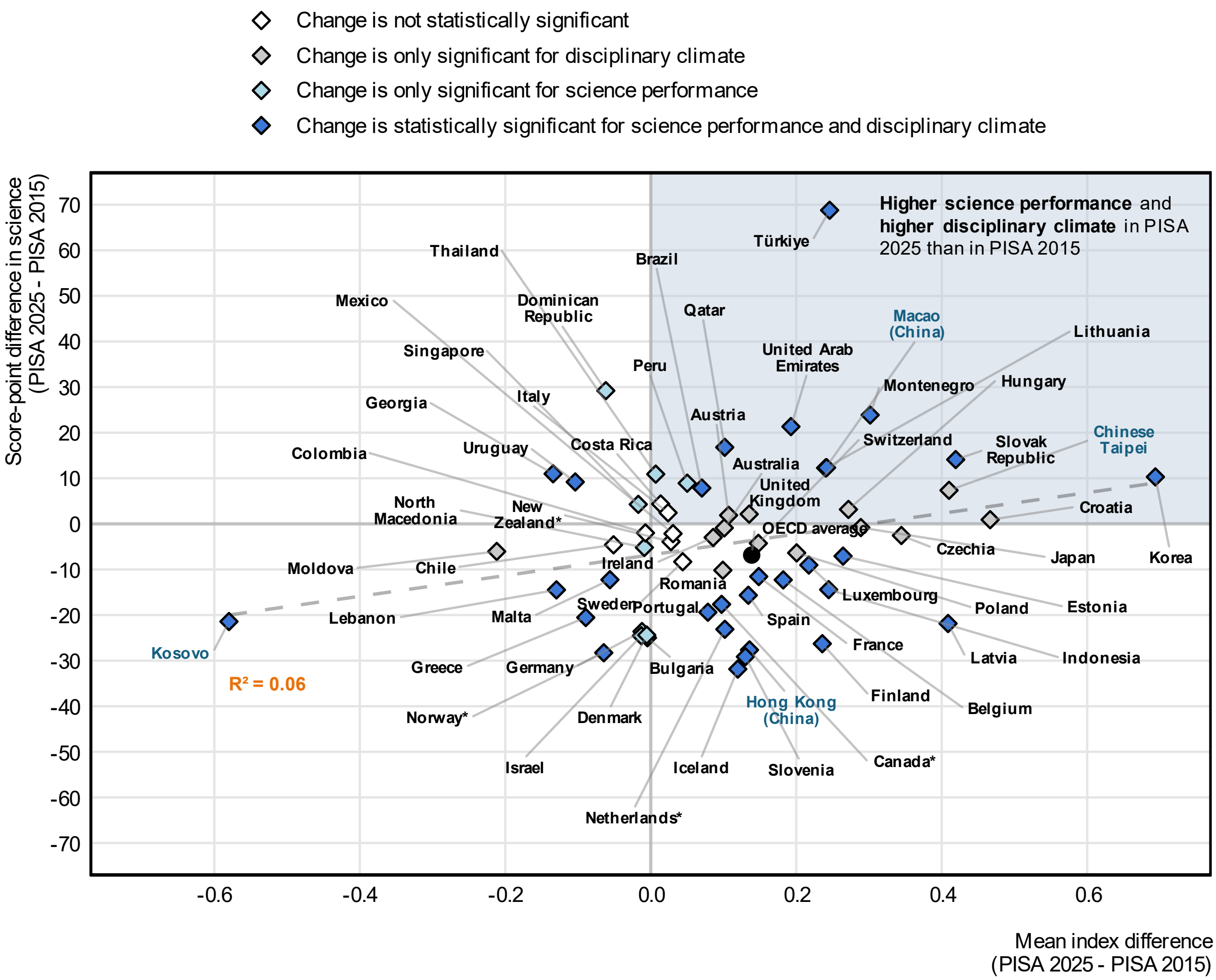
At the system level, trends in disciplinary climate are positively related to changes in science performance, at least when the 2015-2025 period is examined[25], reinforcing the within-country findings (Figure I.4.28).

Disciplinary climate, however, remains a concern in many countries and economies. On average across OECD countries, around 30% of students reported disruptions from noise and disorder, and one-fifth reported that students cannot work well in most or every science lessons (Table I.B1.4.132). Those averages mask substantial heterogeneity across education systems, with 50% or more of students reporting regular noise and disorder in Argentina and Uruguay, and more than one-third reporting regular difficulty of working well in Greece, the Palestinian Authority, Morocco and Bulgaria. Disciplinary climate is, on the contrary, especially conducive to learning in Korea and B-S-J-Z (China), where fewer than one in ten students reports regular disruptions in each question.

Students reporting higher disciplinary climate in school science lessons tend to have higher scores in science[26] and more positive attitudes towards learning[27] in nearly all countries/economies, even after accounting for schools' and students' socio-economic profile (Tables I.B1.4.136 and I.B1.4.137). Likewise, at the system level, countries with higher overall disciplinary climate in 2025 present higher average science performance[28] and higher levels of help seeking and science enjoyment, even after accounting for GDP per capita when considering all countries and economies (Table I.B1.4.188).

Students in socio-economically disadvantaged schools tend to report a more disruptive disciplinary climate than their peers in advantaged schools, on average across OECD countries and in 53 countries/economies (Table I.B1.4.133). Moreover, in education systems where the gap in disciplinary climate between advantaged and disadvantaged schools is larger, socio-economic disparities in science performance also tend to be greater (Table I.B1.4.188).

Figure I.4.28. Change between 2015 and 2025 in disciplinary climate and in science performance



Note: Only countries and economies with available data are shown.
Source: OECD, PISA 2025 Database, Tables I.B1.4.134 and I.B1.2a.36 (Chapter 2). See https://stat.link/o1j4k0 for the underlying data.

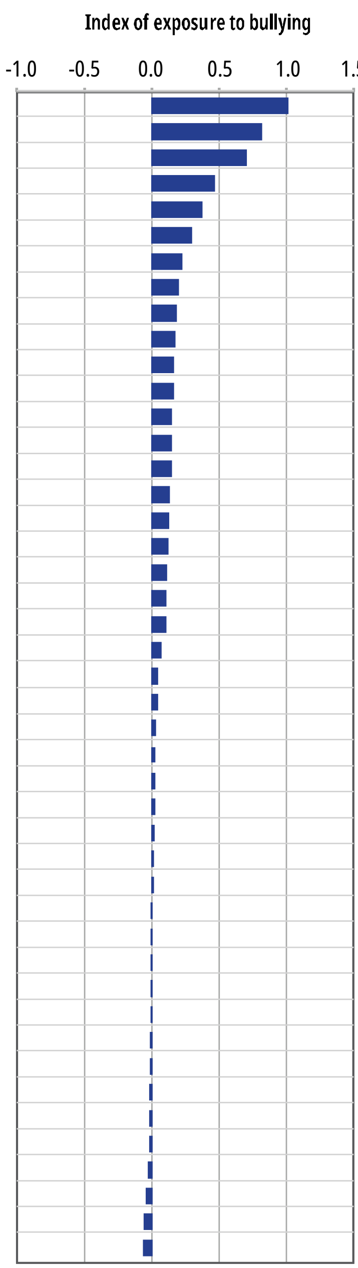
Bullying and cyberbullying

Bullying undermines students' sense of safety and belonging at school and can have lasting detrimental consequences for learning and well-being. PISA 2025 data provide new evidence on the prevalence of cyberbullying as well as trends on other types of bullying since 2015.

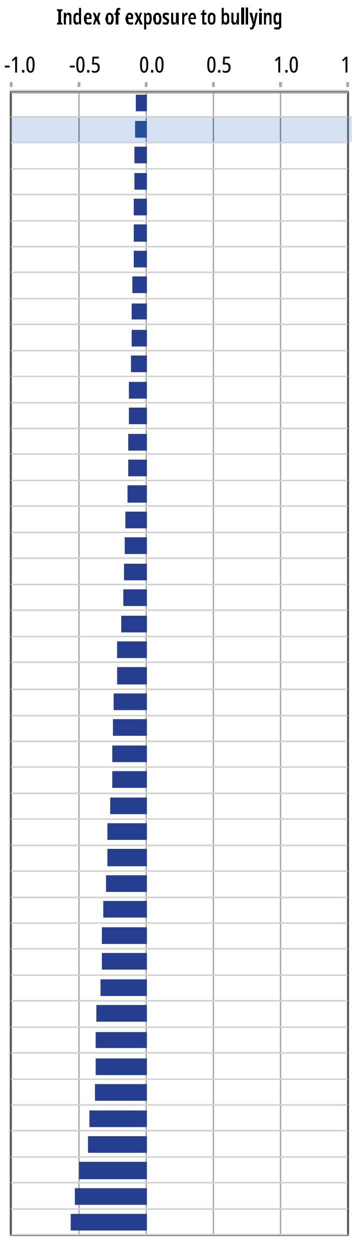
On average across OECD countries, 20% of students reported being victims of at least one form of bullying[29] at least a few times per month in 2025 (Figure I.4.29). Boys and socio-economically disadvantaged students report higher levels of bullying victimisation than girls and advantaged students, respectively, on average across OECD countries and in many education systems[30] (Table I.B1.4.140).

Figure I.4.29. Students' exposure to bullying

Results based on students' self-reports



	Percentage of students who reported being bullied at least "a few times a month":					
	Any type of bullying act	Other students made fun of me	I was threatened by other students	I got hit or pushed around by other students	Other students spread nasty rumours about me	Information about me that was upsetting was published online without my consent
Rwanda	56.8	30.9	23.9	21.1	25.6	21.9
Kenya	54.9	35.2	20.1	17.5	23.9	13.4
Philippines	47.2	32.8	18.6	15.1	19.5	13.9
Zambia	40.6	25.4	14.0	10.9	17.9	6.1
Brunei Darussalam	33.9	26.4	8.5	8.6	11.4	5.0
Lebanon	33.1	16.1	10.9	13.1	17.1	13.3
El Salvador	24.8	13.8	3.7	6.2	15.6	4.4
Mauritius	28.9	19.3	6.4	6.1	13.7	3.8
Germany	30.6	23.5	3.8	4.7	13.6	5.2
New Zealand*	24.6	19.6	6.0	6.0	7.8	3.4
Moldova	24.2	13.0	5.1	5.9	15.2	3.4
Estonia	26.6	21.7	6.5	6.8	8.4	3.0
Latvia	25.2	13.7	8.6	9.6	11.3	5.3
Paraguay	27.7	14.3	6.4	5.3	18.5	5.1
Denmark	25.1	19.7	4.6	8.3	8.2	3.5
Australia	22.6	18.8	5.5	5.9	7.7	0.0
Malta	23.1	16.1	7.1	8.5	10.5	4.7
Malaysia	26.6	17.8	3.9	4.3	13.8	4.6
Dominican Republic	26.8	15.3	7.2	5.4	15.1	6.1
United Kingdom	22.8	19.3	5.2	6.9	7.7	2.8
Macao (China)	24.7	20.2	3.8	4.1	10.3	5.1
Peru	24.1	13.8	3.1	5.5	14.6	4.3
Qatar	21.5	14.0	5.6	6.4	10.5	5.1
Ecuador	22.9	11.3	4.0	4.5	15.0	4.4
Austria	24.0	17.7	4.3	5.9	10.2	5.2
Bulgaria	23.7	12.5	7.4	9.5	12.8	7.4
Argentina	20.5	11.4	4.7	4.3	11.3	4.1
Colombia	20.7	10.7	3.4	4.3	13.4	3.6
Chile	21.3	10.6	4.1	5.2	13.7	4.4
Switzerland	21.3	16.2	3.5	4.5	10.1	3.7
United Arab Emirates	21.4	14.3	5.7	7.0	9.9	5.4
Guatemala	24.6	12.5	4.2	6.7	14.7	4.1
Czechia	24.5	13.5	4.0	8.5	13.0	3.6
Romania	20.9	13.3	5.2	5.1	10.4	3.3
Singapore	20.2	16.8	3.0	4.4	6.8	2.0
Costa Rica	23.4	11.8	4.5	4.2	16.0	3.8
Luxembourg	19.7	14.0	4.4	4.2	9.5	4.0
Belgium	19.9	13.6	3.7	4.3	9.2	2.9
Morocco	21.3	8.3	5.4	6.6	12.5	4.4
Indonesia	24.1	15.2	3.2	5.6	11.6	7.0
Canada*	19.3	14.8	4.5	5.3	7.5	3.2
Jordan	23.4	12.9	5.3	6.7	10.1	4.9
Hong Kong (China)	22.2	18.4	3.9	6.0	7.8	4.0
Cambodia	18.6	13.8	3.0	3.3	6.9	3.0
Palestinian Authority	22.2	11.6	5.5	6.9	10.1	5.6



	Percentage of students who reported being bullied at least "a few times a month":					
	Any type of bullying act	Other students made fun of me	I was threatened by other students	I got hit or pushed around by other students	Other students spread nasty rumours about me	Information about me that was upsetting was published online without my consent
Kosovo	23.6	10.7	4.6	7.0	13.7	7.6
OECD average	19.6	13.8	4.0	4.9	8.6	3.2
Greece	21.9	15.8	3.7	5.8	8.3	3.1
Mongolia	21.6	13.2	4.6	4.1	11.5	3.9
Türkiye	21.4	15.7	3.2	3.8	9.5	3.0
Lithuania	18.2	12.2	5.9	5.8	8.1	3.8
Sweden	17.6	13.1	3.4	6.3	5.9	0.0
Ireland	16.6	14.1	3.5	4.0	4.7	1.7
Viet Nam	19.9	15.8	3.5	2.7	8.7	2.8
Mexico	19.5	10.7	3.5	4.7	12.1	2.8
Norway*	17.3	13.2	3.8	5.7	6.0	2.9
Hungary	19.9	12.5	4.0	4.3	10.3	5.0
Brazil	16.9	10.2	3.1	2.6	8.9	2.8
Finland	16.8	13.7	4.4	4.8	7.0	3.1
Uruguay	15.9	10.2	3.1	3.5	8.1	2.5
Slovenia	20.1	12.5	5.4	7.4	9.9	3.8
Poland	17.1	10.9	3.5	3.9	10.5	3.2
France	17.7	13.5	3.3	3.4	7.2	2.7
Slovak Republic	18.9	9.7	3.7	4.1	11.5	3.0
Thailand	18.2	11.2	3.5	2.4	7.6	5.9
Kyrgyzstan	18.5	9.6	2.7	3.2	10.3	3.6
Iceland	14.9	12.0	3.6	3.1	4.4	2.0
Israel	15.2	10.5	4.5	5.3	6.1	3.7
North Macedonia	16.5	7.8	4.3	5.9	9.8	5.5
Spain	14.0	8.9	2.8	3.2	7.0	1.9
Croatia	15.5	9.0	4.7	3.6	7.7	1.6
Kurdistan Region (Iraq)	18.1	8.9	4.0	5.0	9.0	3.9
Netherlands*	13.1	8.1	2.4	3.0	5.9	2.3
Portugal	14.2	9.9	2.6	2.1	7.1	1.7
B-S-J-Z (China)	13.1	11.0	1.4	2.1	4.5	1.9
Ukrainian regions (17 of 27)	14.0	7.1	3.5	4.6	7.9	3.1
Montenegro	16.8	7.7	6.2	3.4	8.9	2.7
Dushanbe (Tajikistan)	11.6	6.1	3.2	3.7	5.7	2.6
Japan	15.7	13.7	1.8	5.4	3.8	1.1
Georgia	13.8	6.7	3.1	5.3	5.9	3.8
Serbia	13.9	7.8	4.0	4.1	7.6	3.4
Italy	11.1	7.6	1.9	1.7	5.4	1.3
Azerbaijan	12.8	8.0	3.7	3.5	5.3	3.0
Saudi Arabia	11.7	7.5	2.6	2.7	5.4	2.6
Chinese Taipei	11.0	9.8	1.1	0.8	4.1	1.8
Korea	13.5	12.5	1.8	1.6	3.0	1.2
Uzbekistan	10.2	4.4	1.9	2.1	5.8	2.0
Kazakhstan	8.8	4.1	1.6	1.8	5.7	2.1
Armenia	8.8	3.5	1.8	2.6	5.3	2.8

Notes: Positive values in the index of exposure to bullying indicate that students are more exposed to bullying at school than are students on average across OECD countries.

Countries and economies are ranked in descending order of the index of exposure to bullying.

Source: OECD, PISA 2025 Database, Table I.B1.4.138. See https://stat.link/o1j4k0 for the underlying data.

Compared with 2022, the prevalence of bullying increased in a large majority of countries and economies participating in PISA 2025[31] (Table I.B1.4.143). Relational bullying, rather than physical bullying or verbal bullying, is the form that increased the most between 2022 and 2025 across all participating countries. In 47 countries and economies, the share of students reporting that other students spread nasty rumours about them at least a few times per month rose over this period, although increases greater than five percentage points were observed only in Guatemala and Germany (Table I.B1.4.143).

This widespread rise contrasts with the decline in bullying observed between 2018 and 2022 in most countries and economies. Overall, the magnitude of the 2018-2022 decline was greater than the 2022-2025 increase; so the PISA 2025 levels of bullying are still somewhat lower than in 2018, on average across OECD countries and in most countries and economies[32] (Table I.B1.4.143).

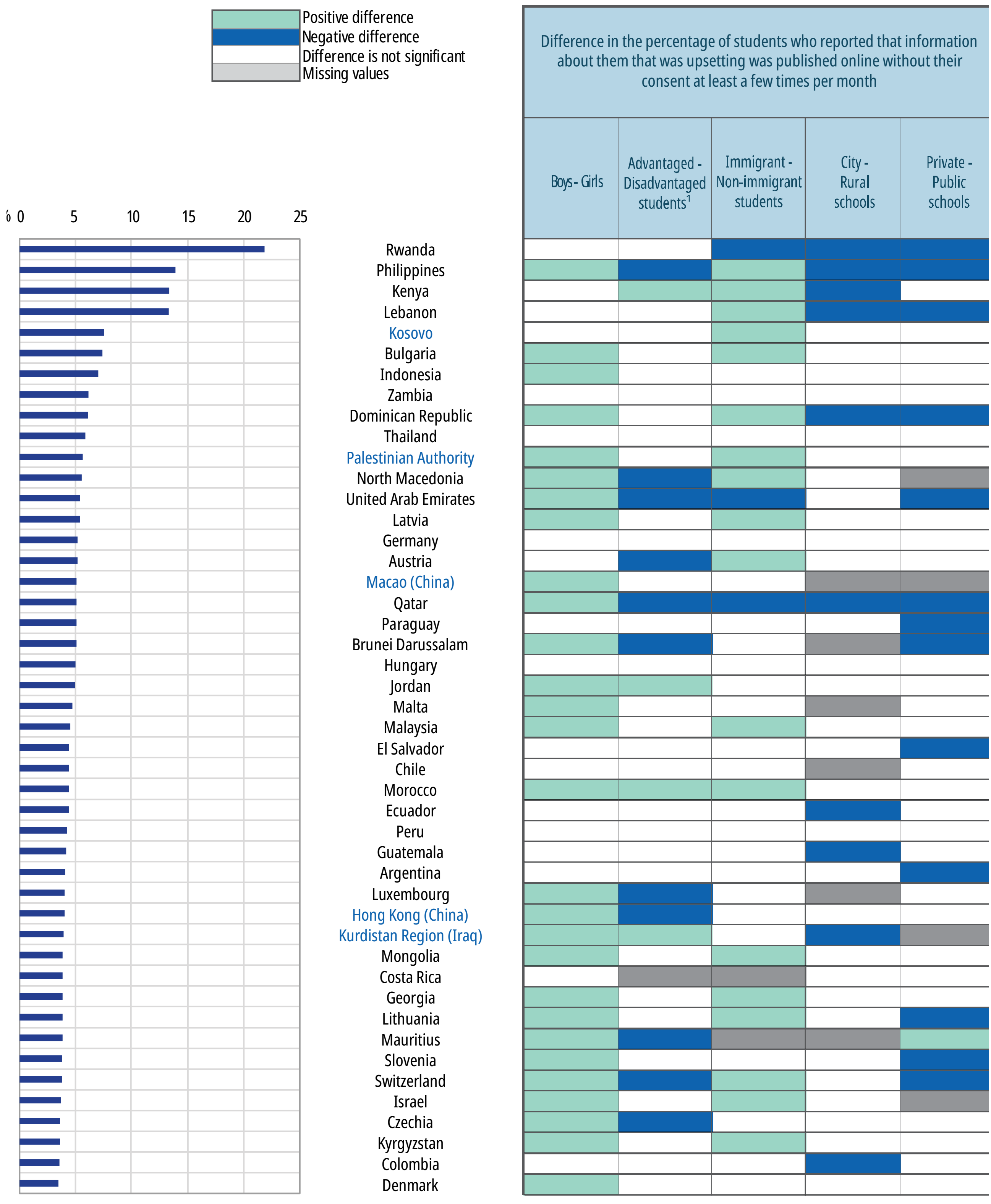
Part of the contrasting trends across PISA cycles might be partly explained by the impact of the COVID-19 pandemic on students' daily interactions. Evidence from comparisons between PISA 2018 and PISA 2022 suggests that periods of remote or hybrid schooling during the pandemic reduced students' in-person contact and temporarily limited opportunities for face-to-face bullying (Li et al., 2025[16]). As schools fully reopened, the return to regular in-person interaction – combined with increases in behavioural and well-being challenges reported in many systems – may have contributed to the rise in bullying between 2022 and 2025.

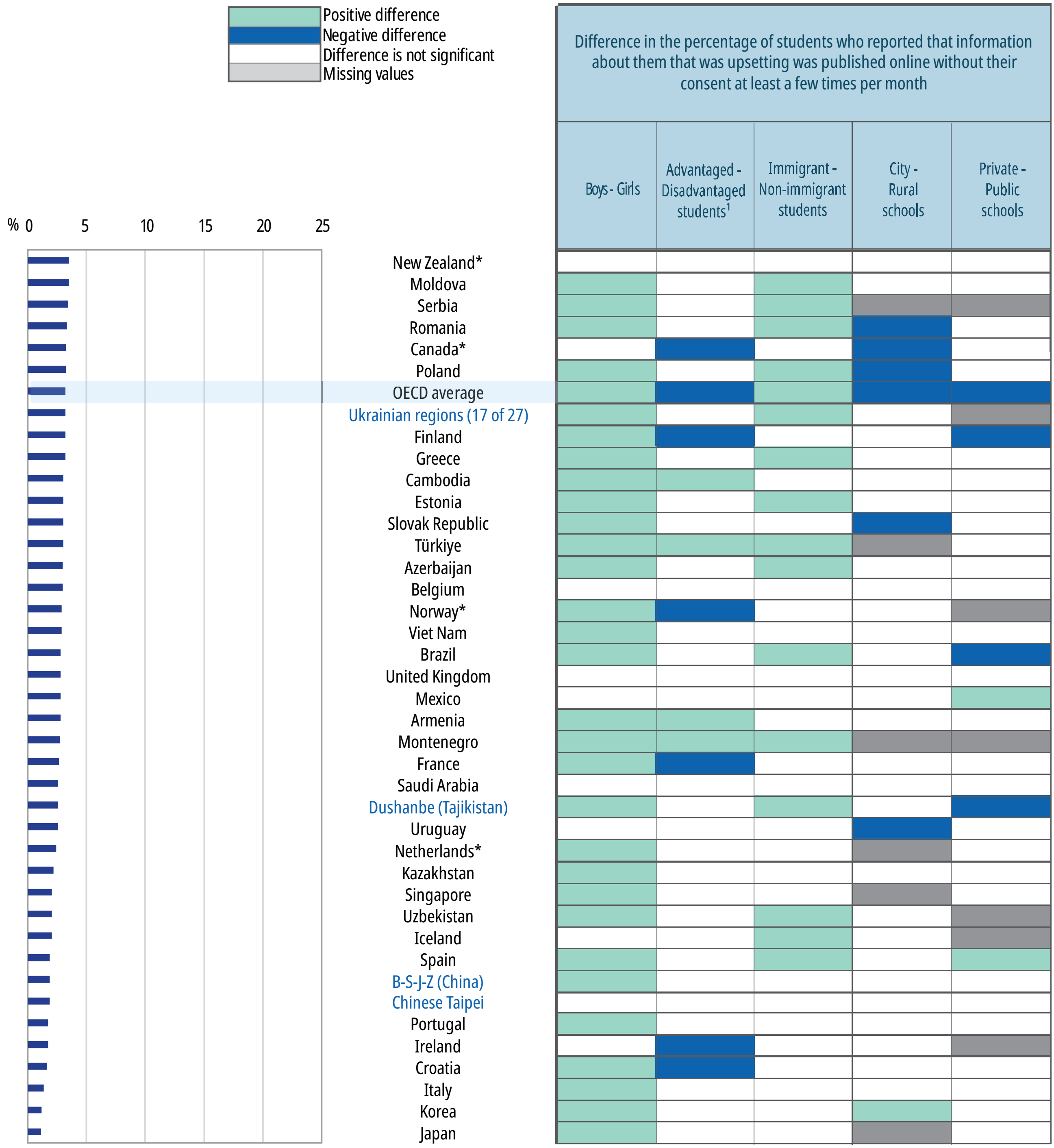
For the first time, in 2025, PISA introduced a new item on cyberbullying in its question on exposure to bullying: "information about me that was upsetting was published online without my consent". While most forms of bullying measured in PISA may occur either in person or online (except for physical bullying), this new item captures cyberbullying more specifically because it refers to a behaviour that can occur only in the online environment. Publishing upsetting information without consent is a behaviour that reflects how bullying has evolved in the context of widespread digital technology and social media use.

Overall levels of cyberbullying were relatively low, compared with other forms of bullying (Figure I.4.30). On average across OECD countries, only 3% of students reported that information about them that was upsetting was published online without their consent at least a few times per month, with large heterogeneity across systems. In many countries and economies, boys and students in socio-economically disadvantaged schools were more likely to experience this form of cyberbullying than girls and students in advantaged schools. However, the magnitude of these differences was relatively small, amounting to about 1-2 percentage point on average across OECD countries (Table I.B1.4.141).

Figure I.4.30. Students' exposure to cyberbullying, by student and school characteristics

Percentage of students who reported that information about them that was upsetting was published online without their consent at least a few times per month





	Boys - Girls	Advantaged - Disadvantaged students[1]	Immigrant - Non-immigrant students	City - Rural schools	Private - Public schools
Countries/economies with a positive difference	59	8	34	1	3
Countries/economies with no difference	28	60	48	58	56
Countries/economies with a negative difference	0	18	3	16	17

1. A socio-economically advantaged (disadvantaged) student is a student in the top (bottom) quarter of the PISA index of economic, social and cultural status (ESCS) in his or her own country/economy.
Countries and economies are ranked in descending order of the percentage of students exposed to cyberbullying.
Source: OECD, PISA 2025 Database, Table I.B1.4.141. See https://stat.link/o1j4k0 for the underlying data.

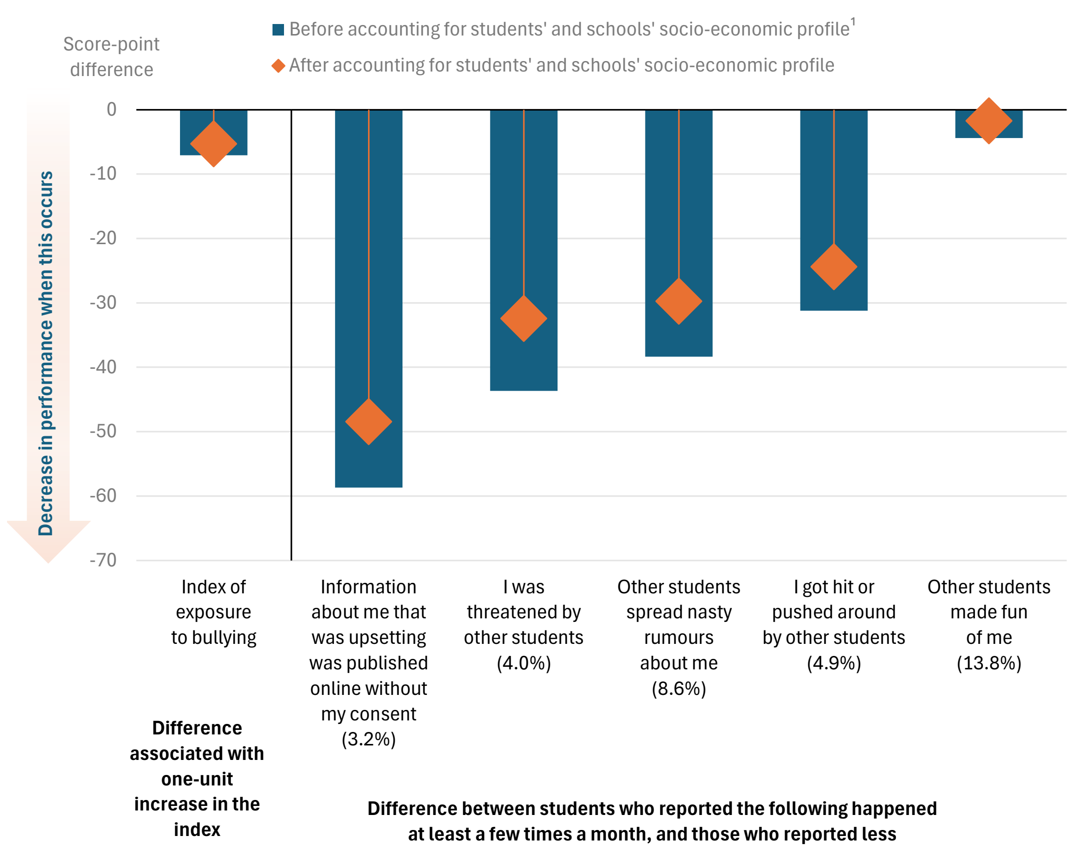
Although cyberbullying is less frequently reported than other forms of bullying, it often occurs in addition to other forms of bullying, and research suggests that it is associated with poorer well-being and mental health outcomes.[33] On average across OECD countries, of students who reported being cyberbullied, nine out of ten also reported that they experience other forms of bullying at least once a month (Table I.B1.4.139).

PISA 2025 results show that cyberbullying exhibits the strongest negative association with student performance compared to other forms of bullying (Figure I.4.31). In the 82 out of 86 countries and economies with available data, victims of cyberbullying scored between 13 points to almost 90 points lower in science than their peers with similar socio-economic profile who had not reported experiencing this form of bullying (Table I.B1.4.144). Those negative relationships may reflect a mutually reinforcing relationship between lower performance and bullying victimisation and may signal a potential dose-response effect of bullying and cyberbullying, already documented on well-being outcomes (Gottschalk, 2022[17]).

Beyond cyberbullying, all forms of bullying examined in PISA are associated with lower student performance and lower sense of belonging at school in most countries and economies, even after accounting for student and school socio-economic profile (Figure I.4.31 and Table I.B1.4.147). These patterns are consistent with earlier PISA analyses and international research.

Figure I.4.31. Students' exposure to bullying and science performance

Change in science performance when students reported exposure to bullying; OECD average

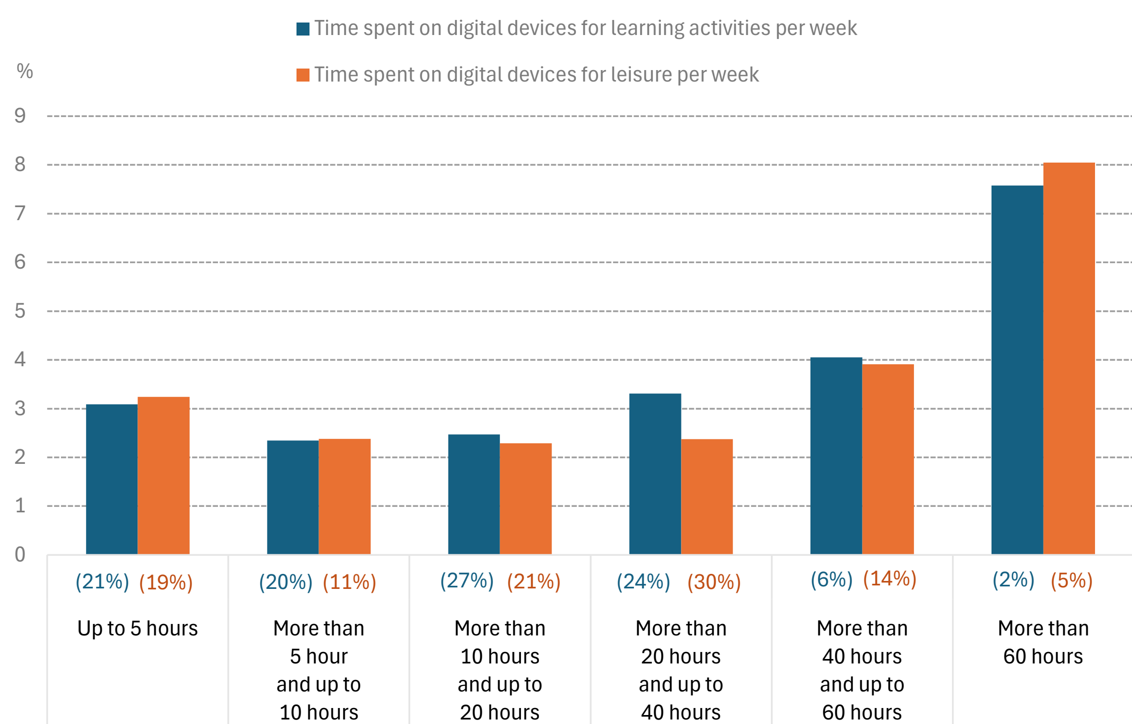


1. The socio-economic profile is measured by the PISA index of economic, social and cultural status (ESCS).
All values are statistically significant (see Annex A3).
Percentage of students who reported the following happened at least a few times a month is shown in parentheses.
Source: OECD, PISA 2025 Database, Table I.B1.4.144. See https://stat.link/o1j4k0 for the underlying data.

Cyberbullying is closely related to students' use of digital devices. As shown in Figure I.4.32, on average across OECD countries, limited or moderate use of digital devices (up to 40 hours per week for leisure and 20 hours per week for learning activities) is not strongly associated with cyberbullying. Of limited or moderate users, around 2-3% report being cyberbullied. However, students who spend more time on digital devices are more likely to report experiencing cyberbullying victimisation. Of those who report higher levels of use (over 60 hours per week for either learning or leisure), 7-8% report that upsetting information about them was published online.

Figure I.4.32. Cyberbullying and time spent using digital devices

Percentage of students reporting that upsetting information about them was published online without their consent at least a few times per month; OECD average



Note: Percentage of students per time spent on digital devices per week is shown in parentheses. Time spent on digital devices includes use at school as well as use before and after school during weekdays and on weekends.
Source: OECD, PISA 2025 Database, Table I.B1.4.148. See https://stat.link/o1j4k0 for the underlying data.

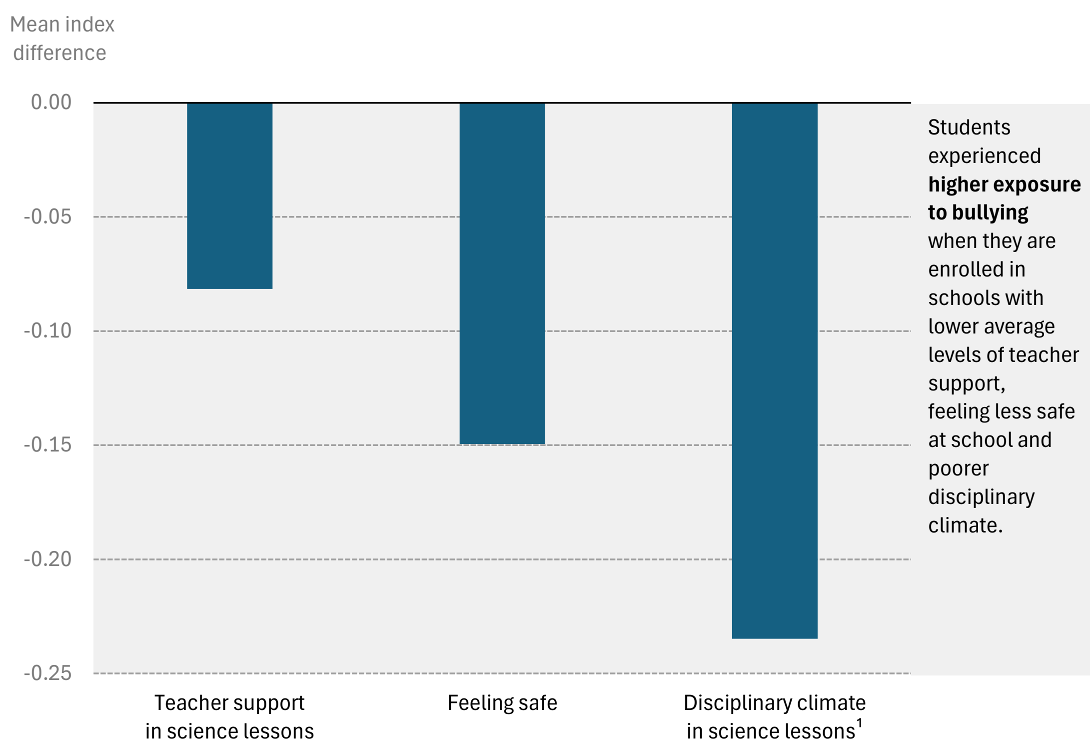
Students' exposure to bullying is strongly associated with key features of the school learning environment (Figure I.4.33). While supportive teacher-student relationships remain important, these findings suggest the added value of comprehensive, school-level strategies that address bullying as a systemic issue rather than an individual one. An orderly disciplinary climate and a strong sense of safety emerge as particularly important protective factors, underscoring the role of whole-of-school approaches to bullying prevention and mitigation. Policies and practices that promote consistent behavioural expectations, safe and inclusive learning environments, and shared responsibility among school staff appear to be more closely associated with lower levels of bullying than isolated measures alone.

Consistent with students' reports on bullying, school principals in 2025 tend to report more negative school climate[34] than 2022 in a great majority of countries and economies with available data (Table I.B1.4.156). For example, in 2022, around 30% of students were in schools whose principal reported profanity is a problem in their school to a moderate or large extent, but it increased to 52% in 2025 (Table I.B1.4.157). The change in the frequency of profanity between 2022 and 2025 is negatively associated with the change in science and reading performance between 2022 and 2025 at the system level (Table I.B1.4.189).

Despite increased reports of bullying by students and a more negative school climate reported by principals, students in 2025 indicated higher levels of feeling safe at school and during their commute to and from school than in 2022 in almost all participating countries and economies, with the largest improvements observed in Saudi Arabia, Uzbekistan, Uruguay, Macao (China), Romania and Thailand (Table I.B1.4.151). The change in levels of students' feeling safe is positively associated with the change in science and reading performance between 2022 and 2025 (Table I.B1.4.189).

Figure I.4.33. Exposure to bullying and the school learning environment, at the school level

Difference in the index of exposure of bullying between students enrolled in schools in the top and bottom quarters of the teacher support, feeling safe and disciplinary climate indices; OECD average



1. Higher values in the index indicate a more positive disciplinary climate.
All differences are statistically significant (see Annex A3).
Source: OECD, PISA 2025 Database, Table I.B1.4.146. See https://stat.link/o1j4k0 for the underlying data.

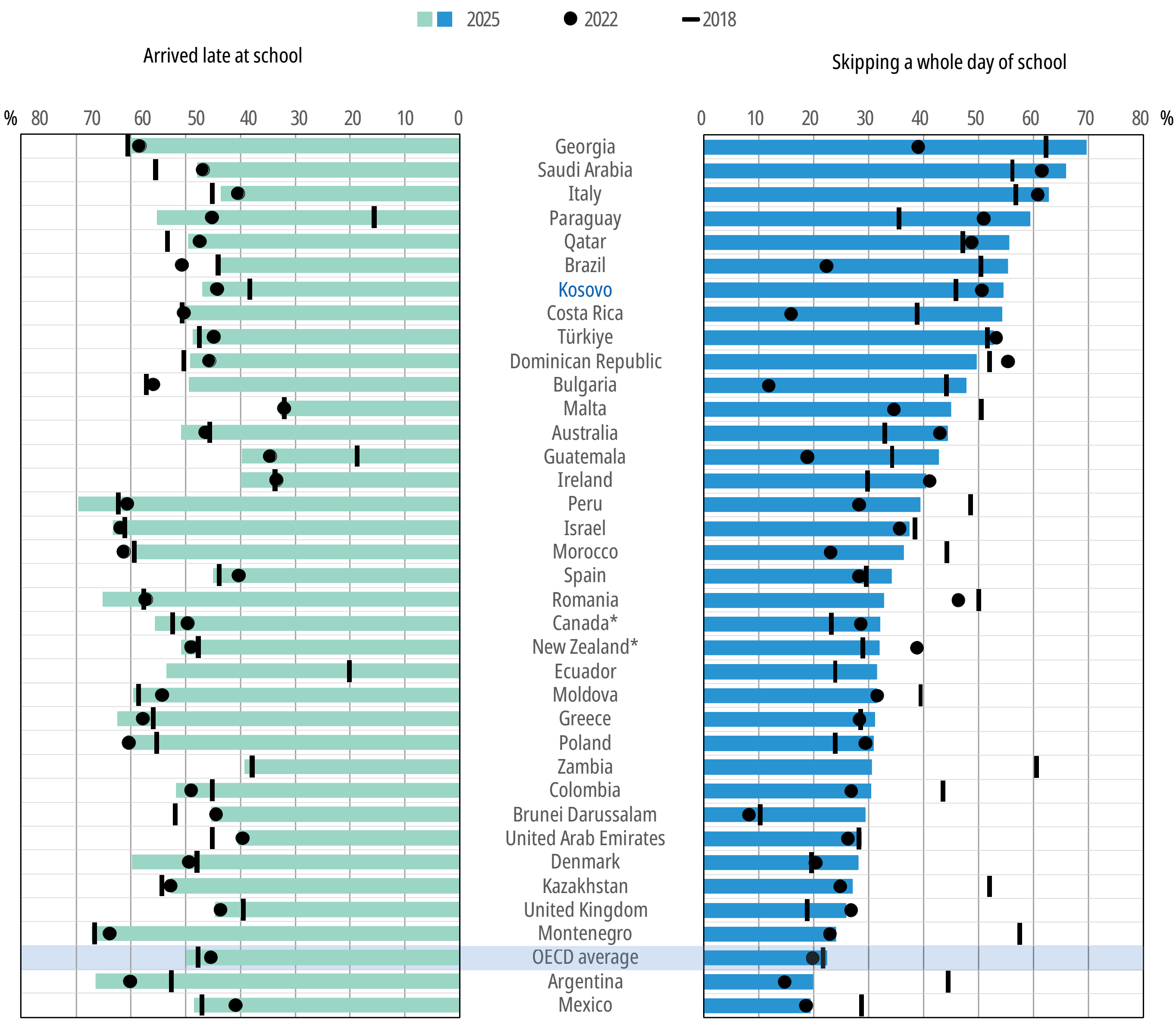
Student truancy and lateness

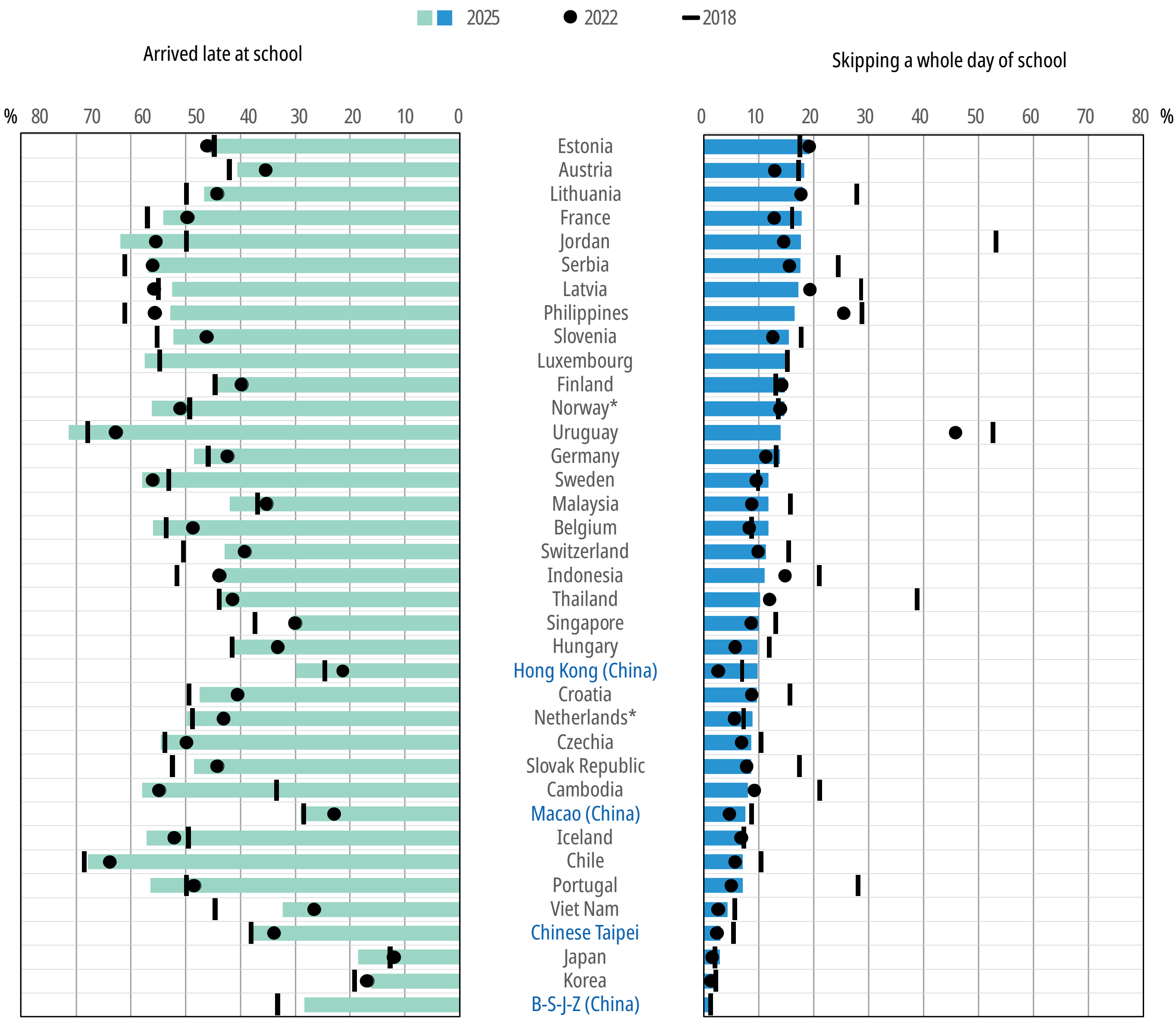
Regular and on-schedule school attendance is essential for learning. Truancy, defined as skipping classes or school without permission, reduces students' opportunities to learn and is often associated with disengagement from school. PISA 2022 highlighted a decrease in truancy and lateness, on average across OECD countries and in most participating countries/economies.

PISA 2025 results show that, compared to previous assessment years, truancy and lateness have increased on average across OECD countries (Figure I.4.34). Between 2018 and 2025, the share of students who reported skipping a whole day of school in the two weeks prior to the PISA test increased slightly to 22% (+0.6 percentage points), while skipping classes became less common (24% on average, -3 percentage points). Over the same period, the prevalence of arriving late for school rose by 2 percentage points (50% on average). Changes since PISA 2022 show a clearer upward trend: the share of students who reported skipping a whole day of school increased by about 3 percentage points, skipping classes rose by 2 percentage points, and lateness increased by 4 percentage points on average across OECD countries.

Figure I.4.34. Change between 2018 and 2025 in truancy and lateness

Percentage of students who reported that the following happened at least once in the two weeks prior to the PISA test





Notes: Only countries/economies that participated in both PISA 2025 and PISA 2018 are shown.

Countries and economies are ranked in descending order of the percentage of students who skipped a whole day of school in the two weeks prior to the PISA test in 2025.

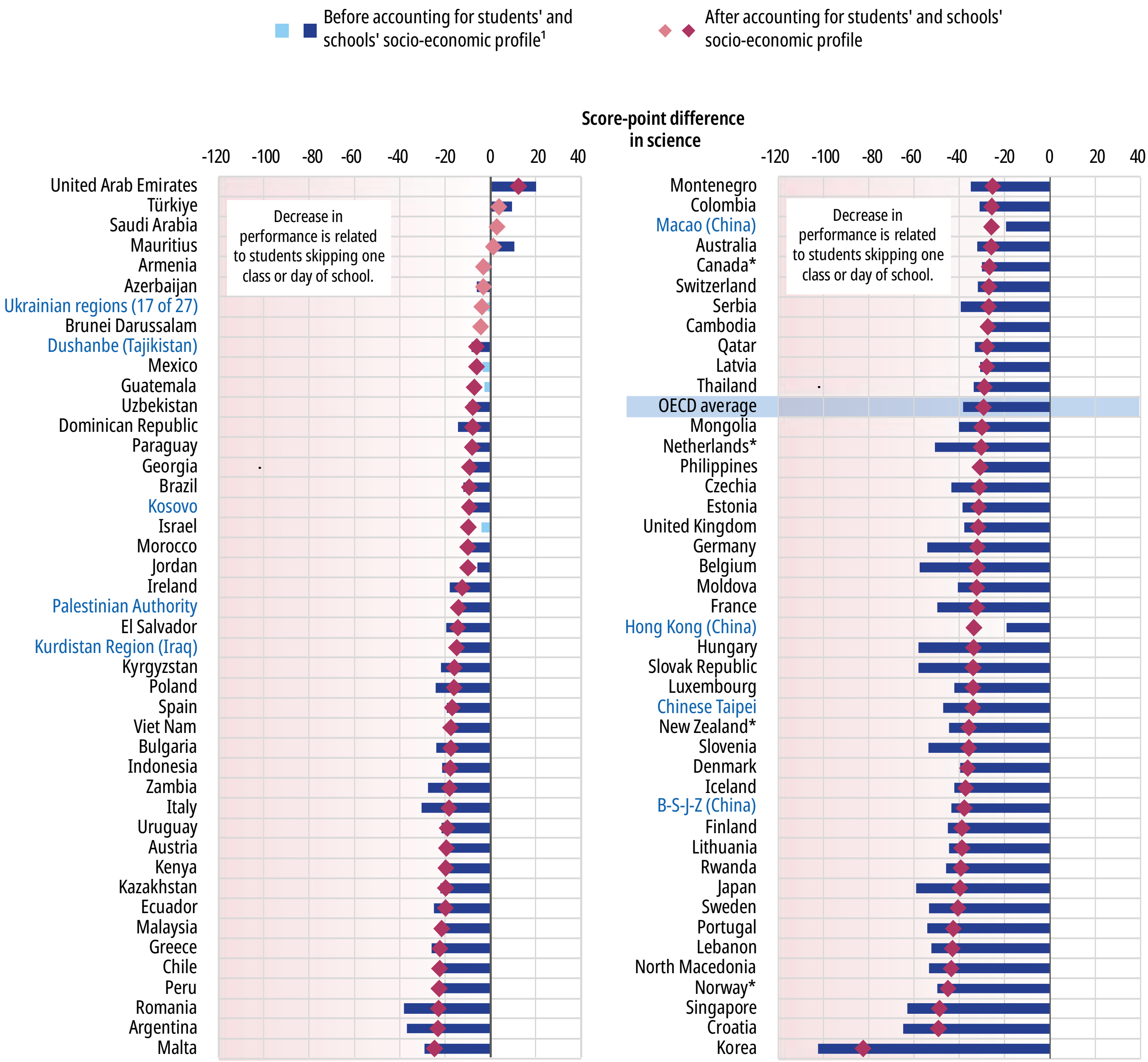
Source: OECD, PISA 2025 Database, Table I.B1.4.161. See https://stat.link/o1j4k0 for the underlying data.

Truancy is negatively associated with student science performance and attitudes towards learning in nearly all countries and economies[35] (Figure I.4.35 and Table I.B1.4.164). These relationships hold even after accounting for students' and schools' socio-economic profile, highlighting a possible negative impact of truancy but may also be signalling reverse causality: academically struggling students may choose (self-select) to play truant. At the system level, a similar pattern is observed: countries and economies with higher truancy rates in 2025 tend to have lower average science performance, even after accounting for GDP per capita (Table I.B1.4.188). However, trends in truancy are not consistently associated with trends in science performance across education systems[36] (Table I.B1.4.189).

Policies aimed at improving attendance may contribute to reducing educational inequalities both in terms of student performance and attitudes towards learning. Truancy is indeed more prevalent among students from disadvantaged backgrounds in most countries, although the size of the gaps varies widely (Table I.B1.4.160). In education systems where the gap in truancy between advantaged and disadvantaged schools is larger, socio-economic disparities in performance also tend to be greater (Table I.B1.4.188).

Figure I.4.35. Truancy and science performance

Change in science performance when students reported that, in the two weeks prior to the PISA test, they had skipped at least one class or day of school, before and after accounting for schools' and students' socio-economic profile



1. The socio-economic profile is measured by the PISA index of economic, social and cultural status (ESCS).
Statistically significant differences in science performance are shown in a darker tone (see Annex A3).
Countries and economies are ranked in descending order of the score-point difference in science, after accounting for students' and schools' socio-economic profile.
Source: OECD, PISA 2025, Table I.B1.4.162. See https://stat.link/o1j4k0 for the underlying data.

Table I.4.4. PISA 2025 figures and tables in Chapter 4

Table I.4.1		School resources, relationships with teachers and families, school climate, students' science performance and attitudes towards learning
Figure I.4.1		Shortage of digital devices
Table I.4.2		Shortage of digital devices and student science performance
Figure I.4.2		School capacity to enhance teaching and learning using digital devices: 2018 through 2025
Figure I.4.3		Change between 2022 and 2025 in time spent per day using digital devices at school
Figure I.4.4		Change between 2022 and 2025 in time spent on leisure activities
Figure I.4.5		Time spent on digital devices for learning at school per day and science performance
Figure I.4.6		Time spent on digital devices for leisure at school per day and science performance
Figure I.4.7		Distraction from digital devices in science lessons
Figure I.4.8		Distraction from digital devices and science performance
Figure I.4.9		Digital distraction and frequency of use of digital devices in science lessons
Figure I.4.10		Digital distraction and school policies on the use of digital devices
Table I.4.3		School policies on the use of digital devices and student science performance
Figure I.4.11		Students' use of artificial intelligence chatbots for schoolwork
Figure I.4.12		Students' non-use of artificial intelligence for schoolwork
Figure I.4.13		Mean score in science, by frequency of AI use for schoolwork
Figure I.4.14		Mean score in science, by frequency of AI use “to help me learn” and frequency of assessing AI-generated information in school lessons
Figure I.4.15		Help seeking, by frequency of AI use for schoolwork
Figure I.4.16		Curiosity, by frequency of AI use for schoolwork
Figure I.4.17		Overall level of use of artificial intelligence and mean performance in science
Figure I.4.18		Changes between 2022 and 2025 in shortages of teaching staff
Figure I.4.19		Shortage of education staff and material resources, and science performance
Figure I.4.20		Total time spent on homework (all subjects) and science performance
Figure I.4.21		Study help provision in schools
Figure I.4.22		Change between 2015 and 2025 in reported teacher support in science
Figure I.4.23		Teacher support in science and science performance
Figure I.4.24		Socio-economic gap in higher education aspirations and parental and peer aspirations
Figure I.4.25		Family support and science performance
Figure I.4.26		Change between 2022 and 2025 in family support
Figure I.4.27		Students' educational and occupational expectations
Figure I.4.28		Change between 2015 and 2025 in disciplinary climate and in science performance
Figure I.4.29		Students' exposure to bullying
Figure I.4.30		Students' exposure to cyberbullying, by student and school characteristics
Figure I.4.31		Students' exposure to bullying and science performance
Figure I.4.32		Cyberbullying and time spent using digital devices
Figure I.4.33		Exposure to bullying and the school learning environment, at the school level
Figure I.4.34		Change between 2018 and 2025 in truancy and lateness
Figure I.4.35		Truancy and science performance
Figure I.4.o1	WEB	Students' use of artificial intelligence chatbots for schoolwork to summarise a text they had to read
Figure I.4.o2	WEB	Students' use of artificial intelligence chatbots for schoolwork to conduct preliminary research on a new topic
Figure I.4.o3	WEB	Students' use of artificial intelligence chatbots for schoolwork to draft texts for writing assignments
Figure I.4.o4	WEB	Students' use of artificial intelligence chatbots for schoolwork “to help me learn”
Figure I.4.o5	WEB	Intrinsic motivation to learn, by frequency of AI use for schoolwork
Figure I.4.o6	WEB	Changes between 2022 and 2025 in shortages of education staff and material resources

StatLink https://stat.link/o1j4k0

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Notes

[1] Policy areas typically reported in PISA but not explicitly addressed in this chapter are documented in the online tables in Annex B1. These include, among others, the vertical and horizontal stratification of education systems (such as grade repetition, vocational instructional programmes and ability grouping), decentralisation and school autonomy, accountability mechanisms, private schooling and school choice, the use of student assessments, and school improvement strategies.

[2] In PISA, school digital resources are defined broadly. They include digital devices such as desktop and laptop computers for students and teachers, tablets, e-book readers and smartphones; digital infrastructure such as Internet access, learning management systems or school learning platforms; and educational software that supports activities like finding information, writing texts, carrying out calculations, creating presentations and working collaboratively with others.

[3] Computer availability in school as measured in PISA can reflect both school-owned infrastructure or some other institutional arrangements, such as the provision of personal computer to each student.

[4] On average across OECD countries, and in 27 countries and economies, schools in rural areas report higher levels of computer availability per student than those in urban areas (Table I.B1.4.1). Among these countries and economies, the gap ranges from 1 to 12 additional computers per 10 students in rural schools. A similar pattern is observed across socio-economic backgrounds. On average across OECD countries and in 28 countries and economies, disadvantaged schools report higher levels of computer availability than advantaged schools, with the differences ranging from 0.3 to 10 more computers per ten students (Table I.B1.4.1). This pattern may reflect lower student numbers in rural schools, targeted policies to increase digital access in disadvantaged contexts, or greater reliance in advantaged or urban schools on privately owned devices. This does not however account for potential differences between urban and rural schools or advantaged and disadvantaged schools in terms of quality of hardware, and quality and speed of broadband connection which can vary widely across and within OECD countries (OECD, 2024[23]).

[5] There is a strong negative correlation between the percentage of students in schools whose principal reported that the school's capacity to provide instruction is hindered to some extent or a lot by a lack of digital resources and the country's per capita GDP, across OECD countries (r= -0.58) and across all countries and economies (r = -0.69). The correlation between per capita GDP and the share of students in schools whose principal reported that the school's capacity to provide instruction is hindered to some extent or a lot by inadequate or poor quality digital resources is also negative and strong across OECD countries (r = -0.57) and across all countries and economies (r = -0.69).

[6] A public–private gap is observed in 50 out of 77 countries with available data, and a socio-economic gap in 39 out of 87 countries (Table I.B1.4.7). In most countries and economies, no rural-urban gap is found; but in 11 countries and economies, rural school principals reported more shortages than in urban schools, whereas in 9 countries and economies, urban schools reported more shortages of digital devices.

[7] In 2025, there were on average 12 computers with internet connection per 10 teachers across OECD countries. This ranged from over 20 computers per 10 teachers in a few countries and economies to as few as 3 in several education systems (Table I.B1.4.12). Compared to PISA 2022, the average number of computers per teacher increased by between 1 to 5 computers per 10 teachers in several countries/economies. Declines of a similar magnitude were observed in only a few education systems.

[8] This is measured by the index of schools' capacity to enhance teaching and learning using digital devices, based on principals' reports on whether their school has adequate digital devices, Internet access, software and technical support, as well as teachers with adequate skills, time and resources to integrate digital tools into instruction.

[9] The share of students spending more than one hour per day using digital devices on learning activities on weekdays (before and after school) and weekends declined, by about 8 and 3 percentage points respectively (Table I.B1.4.29). Observed in many systems, this shift possibly reflects the decrease of digital resources use at school for learning activities or post-pandemic shift from online teaching or learning platforms.

[10] Such high levels of engagement with digital devices can have implications for subjective variations in psychosocial functioning (Przybylski, Orben and Weinstein, 2020[24]). Similar findings were noted in PISA 2022 with regards to students' learning outcomes and sense of belonging at school. Over 4 hours spent on digital leisure activities outside of school was associated with a decline in mathematics scores and sense of belonging, while moderate use was related to more positive outcomes on both measures than no use and very high use (OECD, 2025[25]).

[11] These findings hold even after accounting for socio-economic status. Differences are slightly reduced, reflecting the over-representation of students from socio-economically disadvantaged background and disadvantaged schools among those reporting not using digital devices for learning at school in most PISA-participating systems (Table I.B1.4.26).

[12] These results are consistent with the findings observed in PISA 2022 (OECD, 2023[8]) and are consistent with literature on digital engagement and adolescent mental well-being (Przybylski and Weinstein, 2017[26]; Brannigan et al., 2022[28]) that suggest that both high and low use may have a negative relationship with mental well-being.

[13] Digital distraction is negatively related to students' sense of belonging at school in all participating countries and economies, even after accounting for students' and schools' socio-economic profile (Table I.B1.4.45). After adjustment, negative relationships also remain widespread for perseverance (in more than 90% of countries and economies), goal setting (in around 75%), and for help seeking (in 60%). While curiosity is negatively related to digital distraction in most countries and economies, this relationship remains negative in fewer than half of participating countries and economies after accounting for socio-economic factors.

[14] The correlation across all countries and economies is around 0.3 before and after accounting for GDP per capita (Table I.B1.4.186). The associations were no longer statistically significant across all countries and economies (r = 0.14; partial r = 0.10), after excluding the three countries and economies identified as outliers in terms of the joint changes in the prevalence of cell phone bans and the percentage of students spending up to one hour per day using digital devices for leisure at school between 2022 and 2025 (see Annex A3 for details), namely the Dominican Republic, Hungary and New Zealand*.

[15] Consistent with this, having done a task to assess the quality of online information is positively associated with science performance on average across OECD countries and in many countries and economies, both on average and for all AI frequency of use (Tables I.B1.4.69 and I.B1.4.70). Such an association is not observed on average for assessing the quality of AI-generated content after accounting for students' and schools' socio-economic profile, possibly because evaluating AI output requires both general critical literacy skills and specific understanding of how AI systems produce information, alongside differences in usage patterns.

[16] Disadvantaged schools' principals reported fewer teacher staff shortages than their colleagues in advantaged schools in only nine countries/economies (Table I.B1.4.73).

[17] Time students spend on science homework has decreased on average across OECD countries by about 6 minutes, representing a 13% relative decline compared to 2022 (Table I.B1.4.97). This decline is driven by a 7 percentage-point increase in the proportion of students spending less than 30 minutes per day on their science homework. Average science homework time decreased in around three-quarters of countries/economies with available data, and increased in 7 countries/economies: Georgia, Viet Nam, Israel, the Palestinian Authority, the Ukrainian regions (17 of 27), Latvia and Portugal.

[18] On average across OECD countries and in 42 countries/economies, students in socio-economically disadvantaged schools reported higher levels of teacher support than their peers in advantaged schools, suggesting that teachers may compensate for disadvantage through supportive practices (Table I.B1.4.114). In 11 countries/economies, however, students in disadvantaged schools reported lower levels of teacher support, potentially reinforcing existing inequalities.

[19] The absence of system-level correlation between the change in the index of teacher support and the change in science performance between 2015 and 2025 might nonetheless be driven by the presence of outliers. Across all countries and economies, the Spearman raw and partial correlations between these two changes were positive and statistically significant at the 5% level (r = 0.30, partial r = 0.28; see Annex A3 for details).

[20] As in previous PISA assessments, socio-economically advantaged students and girls tend to report that they receive similar or more family support compared to disadvantaged students and boys, in all countries/economies but Kenya, where disadvantaged students report more family support than their advantaged peers (Table I.B1.4.121). Students with an immigrant background, in vocational and in lower secondary education, also tend to report less family support on average across OECD countries, although there is much more heterogeneity across countries and economies.

[21] This finding is not only limited to PISA data but extensively reported in literature (Guyon and Huillery, 2020[20]).

[22] Choosing aspirations aligned with students' own social groups may also help preserve social identity, avoid disruption or cognitive dissonance, and maintain future social ties (Bénabou and Tirole, 2011[19]; Austen-Smith and Fryer, 2005[18]; Schörner and Bittmann, 2023[21])

[23] Disciplinary climate in science lessons is measured with reference to a specific science subject chosen by students in the questionnaire. As a result, although these indicators pertain to science lessons in general, they may refer to different science subjects across countries, depending on student choices and curriculum structure. This point also applies to other indicators based on "science lessons", such as teacher support.

[24] An index was constructed in 2015 with an average of 0 and standard deviation of 1 across OECD countries; a comparable index of disciplinary climate in science lessons was created in 2025.

[25] The associations were no longer statistically significant across all countries and economies (r = 0.13; partial r = 0.15), after excluding the three countries and economies identified as outliers in terms of the joint changes in disciplinary climate and science performance between 2015 and 2025 (see Annex A3 for details), namely Korea, Kosovo and Türkiye.

[26] No relationship with science performance is observed for Korea, Sweden, Chinese Taipei, Viet Nam and Latvia after accounting for socio-economic profile (Table I.B1.4.136).

[27] Before accounting for students' and schools' socio-economic profile, the only exceptions are cases in which no statistically significant relationships are observed, namely in New Zealand*, Macao (China), Türkiye, Singapore,

Morocco and Ireland for curiosity, Brunei Darussalam and Uruguay for goal setting, and the Philippines, Bulgaria, Paraguay and the Dominican Republic for help seeking.

[28] The associations were no longer statistically significant across all countries and economies (r = 0.14; partial r = 0.17), after excluding the four countries and economies identified as outliers in terms of their joint average values in disciplinary climate and science performance (see Annex A3 for details), namely Korea, Japan, B-S-J-Z (China), Kenya (only before accounting for GDP per capita) and Saudi Arabia (only after accounting for GDP per capita). However, the Spearman correlations (including outliers) remain similar to the Pearson correlations (including outliers), suggesting that the observed associations are not driven by the extremity of their values.

[29] PISA 2025 asked students how often ("never or almost never", "a few times a year", "a few times a month", "once a week or more") during the 12 months prior to the PISA test they had had the following experiences in school: "Other students made fun of me" (verbal bullying); "I was threatened by other students" (verbal/physical bullying); "I got hit or pushed around by other students" (physical bullying); and "Other students spread nasty rumours about me" (relational bullying). While these forms of bullying were measured in previous waves, PISA 2025 also introduced a new item on cyberbullying: "Information about me that was upsetting was published online without my consent".

[30] While those patterns are observed in many education systems, no socio-economic gap in bullying is observed in 47 countries and economies, while in 12 countries and economies, advantaged students report higher levels of bullying victimisation. Costa Rica is the only country where girls report more exposure to bullying than boys.

[31] In 51 out of 75 countries and economies with available data, the share of students reporting being victims of bullying at least a few times a month increased for at least one form of bullying with trend data, while remaining stable for the other forms (Table I.B1.4.143). Increases in at least three of the four forms of bullying were observed in 33 education systems. By contrast, bullying prevalence decreased in only 9 countries and economies for at least one form of bullying, and remained stable for the other forms.

[32] The share of students reporting being victims of bullying at least a few times a month decreased across all forms of bullying with trend data in 33 out of 68 countries/economies compared to 2018, and across three out of four forms of bullying in 8 countries/economies (while the prevalence of the other form remained stable).

[33] Being the victim of cyberbullying, traditional bullying or a combination of the two is associated with internalising and externalising symptoms (Chudal et al., 2021[22]), which can include symptoms of depression and anxiety, subjective health and somatic complaints, as well as self-esteem (Gottschalk, 2022[17]). Factors such as low self-esteem, low empathy, reduced life satisfaction and loneliness have been assessed as both predictors and outcomes of cyberbullying (Kasturiratna et al., 2024[27]).

[34] Negative school climate is measured using school principals' responses regarding the extent to which the following behaviours are a problem in their school: "Cheating"; "Profanity"; "Vandalism"; "Theft"; "Intimidation or verbal abuse among students (including texting, emailing, etc.)"; "Physical injury caused by students to other students"; "Intimidation or verbal abuse of teachers or non-teaching staff (including texting, emailing, etc.)"; and "Physical injury caused by students to teachers or non-teaching staff". An index was constructed from these responses, with higher values indicating that problem behaviours contribute more strongly to a negative school climate, and lower values indicating that such behaviours have a lesser impact on the school climate.

[35] A positive relationship between truancy and science performance is observed in the United Arab Emirates, even after accounting for students' and schools' socio-economic profiles, although its magnitude is reduced by 40% compared to raw performance differences, suggesting possible self-selection into truancy in the two weeks preceding the PISA test. This relationship appears to be driven by students reporting that they skipped a whole day of school,

while those who report skipping some classes tend to score lower than their peers on average (Table I.B1.4.162). Contrary to most countries and economies, truancy is more prevalent among students in socio-economically advantaged, private, and urban schools in the United Arab Emirates (Table I.B1.4.160). While similar differences were observed in PISA 2022, where the association with performance was negative, their magnitude were smaller. This may indicate that the prevalence of truancy in the United Arab Emirates, in the two weeks preceding the test, is linked to contextual factors associated with higher performance, rather than reflecting a positive effect of truancy itself.

[36] Outliers may account for the observed absence of consistent associations between changes in these variables (see Annex A3 for details). After excluding these outliers, countries and economies that experienced larger increases in the share of students reporting that they had skipped classes or arrived late for school in the two weeks prior to the PISA assessment tended to show larger declines in science performance relative to both 2018 and 2022. This pattern holds both before and after accounting for differences in GDP per capita across countries and economies (lateness: comparison with 2018: r = -0.35; partial r = -0.34; comparison with 2022: r = -0.24; partial r = -0.22. Skipping class: comparison with 2018: r = -0.36; partial r = -0.35; comparison with 2022: r = -0.36; partial r = -0.34). Increases in the prevalence of whole-day skipping are also negatively associated with changes in science performance after excluding outliers, although this association is only observed comparing PISA 2025 with PISA 2022 (r = -0.36; partial r = -0.37).

5 Students and the environment

This chapter examines not only student performance in environmental science in PISA 2025, but also what PISA 2025 data can tell us about student attitudes towards the environment, their commitment to the environment, and school opportunities that support student environmental agency. The chapter explores student environmental agency, which encompasses the ways in which students understand the natural world and respond to the environmental challenges around them. Such agency emerges from an interplay of what students know, believe and can do, supported by the learning opportunities available to them; this chapter examines these interconnected dimensions and how education systems can strengthen them. Building strong scientific skills and attitudes is essential for sustainable decision-making, and may provide the foundation upon which today's students can lead future scientific and technological breakthroughs in environmental sustainability.

What the data tell us

- About three out of four students reached at least baseline proficiency (Level 2) in environmental science, on average across OECD countries, although differences across countries and economies are observed. In seven countries and economies, more than 85% achieved this.
- Higher-performing students in environmental science tend to report more positive environmental attitudes such as environmental awareness, belief in one's capacity to drive change and belief in collective efficacy.
- Students' environmental awareness declined across all five topics assessed in 2015 and 2025, with the largest drop observed for nuclear waste (-9 percentage points in the share of students who reported being able to explain the topic), followed by greenhouse gases and deforestation (-6 points each), while awareness of water shortages and biodiversity loss fell by 4 points, on average across OECD countries.
- Caring for the environment is widespread among students. On average, 75% of students across OECD countries reported that looking after the global environment is important to them; in 42 countries and economies, this share exceeds 80% and it is over 90% in B-S-J-Z (China), Indonesia, Korea and Cambodia. On average, 16% of students demonstrate a mismatch between their environmental science proficiency and their reported care for the environment.
- Students express strong pro-environmental intentions and optimism, although confidence in how to collaborate effectively is less widespread. On average across OECD countries, large shares of students believe that collective action can address environmental problems (82%) and that individuals can make a difference (81%). However, fewer reported knowing how to collaborate effectively (68%); this dimension also shows substantial cross-country variation (48%–90%).
- Students with more positive environmental attitudes are more likely to take action. Environmental awareness, belief in one's capacity to drive change and belief in collective efficacy are all consistently associated with greater participation in environmental activities across countries and economies.
- On average across OECD countries, 28% of students reported never participating in any of the five environmental activities examined in PISA 2025, such as discussing with friends and family how to have a positive impact on the environment. Among these students, common reported reasons include not knowing anyone engaged in environmental actions (OECD average: 56%), believing that someone else would take care of the problem (49%), and feeling their own actions would not make a difference (47%).
- While a majority of students reported interest in contributing to environmental protection through their future careers, it is unevenly distributed. On average across countries, around 62% of students expressed interest, with higher levels among girls, socio-economically advantaged students and higher-performing students.
- Academically stronger students and students with pro-environmental attitudes were more likely to report their interest in contributing to environmental protection through their future occupations.
- Despite the general positive relationship between environmental attitudes and commitment, on average across OECD countries, 7% of 15-year-old students reported caring for the environment but not being committed to protecting the environment. Such a mismatch between attitudes and commitment is minimal, and less than 1% in Viet Nam, Indonesia and Kenya, while it reached 16% in Korea.
- Classroom opportunities for environmental learning are consistently associated with stronger pro-environmental attitudes and commitment, even if their relationship with students' performance in environmental science varies across countries and economies. Furthermore, a lack of classroom opportunities for environmental learning is related to the mismatch mentioned above. For example, 49% of environmentally "caring and committed" students agreed or strongly agreed that their class discusses solutions to environmental issues, while only 34% of "caring but not committed" students did so.

Introduction

Around the world, young people are witnessing complex environmental challenges and considering what a more sustainable future might look like. There are multiple ways in which students may contribute to addressing socio-ecological challenges. Building strong scientific and disciplinary skills is essential for sustainable decision-making and may provide the foundation upon which today's students can lead future scientific and technological breakthroughs in environmental sustainability. Pro-environmental attitudes, participation in environmental activities, and related career aspirations can support long-term environmental engagement at both the individual and community levels. These elements are different but equally valuable; they can reinforce one another, and none should be considered more important than the others.

Beyond examining student performance in environmental science, PISA 2025 data explore student attitudes towards the environment, their commitment to the environment – demonstrated by participation in environmental activities and/or interest in a career that contributes to environmental protection – and school opportunities that support student environmental agency. Student environmental agency encompasses the ways in which students understand the natural world and respond to the environmental challenges around them. As shown in Figure I.5.1, student environmental agency emerges from an interplay of what students know, believe and do, supported by the learning opportunities available to them. This chapter examines these interconnected dimensions and how education systems can strengthen them.

A first pillar of environmental agency is student proficiency in environmental science. Proficiency captures how much students know and understand about environmental issues. Their performance in PISA environmental science tasks[1] reflects their grasp of ecological and Earth systems, the causes and consequences of environmental problems, and their ability to interpret scientific evidence and Figure out potential solutions. This knowledge and these competencies form the foundation for informed decision-making regarding environmental concerns.

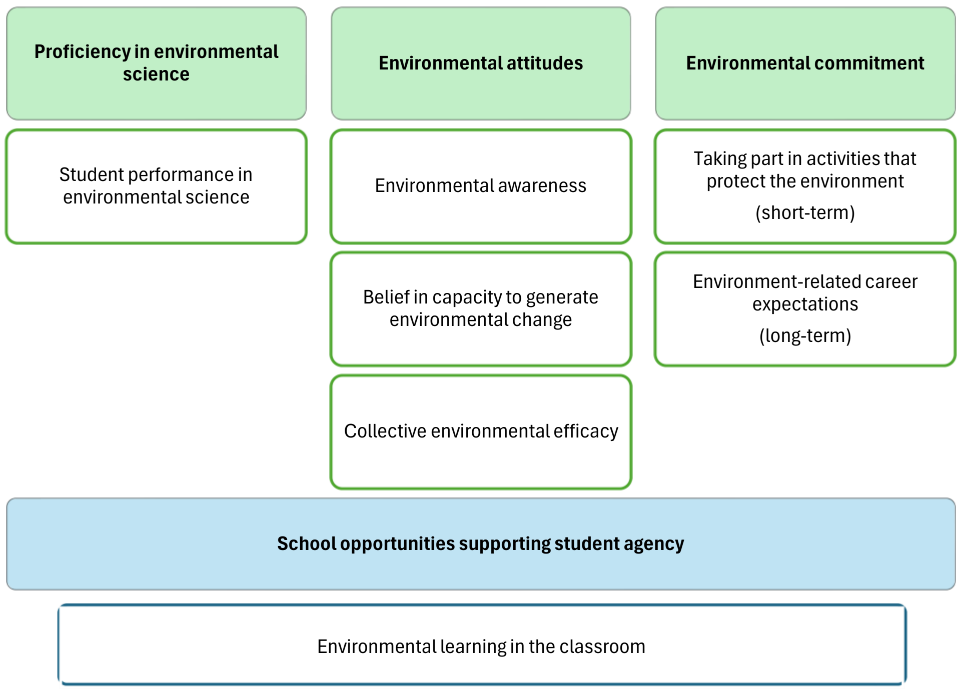
A second pillar, environmental attitudes, focuses on how much students care about the environment and what they believe about their capacity – individually and collectively – to make a difference. As highlighted in Figure I.5.1, this includes measuring students' environmental awareness, beliefs on whether they can generate environmental change personally, and beliefs in collective environmental efficacy.

The third pillar, environmental commitment, focuses on the extent to which students translate knowledge and attitudes into concrete behaviours and longer-term engagement. In the short term, this includes whether students engage in everyday activities that contribute to environmental protection. In the long term, it captures whether students aspire to contribute to environmental protection through their future careers. This approach recognises that there are many ways in which students contribute to environmental well-being. Environmental agency involves the capacity to define meaningful objectives, remain engaged over time, and adapt when facing challenges. In other words, agency reflects a commitment to a trajectory of sustained engagement, whatever form that engagement may take, rather than one-off decisions.

Finally, the chapter examines the opportunities that schools provide for environmental learning, represented in the foundation layer of Figure I.5.1. These opportunities reflect the extent to which environmental issues are integrated into teaching and assessment, including activities such as discussing solutions to environmental problems, providing opportunities for students to research environmental topics, taking students on field trips related to environmental issues, and assessing students' environmental knowledge. Considered together, these classroom-based opportunities indicate how frequently students are exposed to environmental learning in school and how they are related to their performance in science, environmental awareness, attitudes and engagement.

Taken together, these four dimensions – proficiency, attitudes, commitment and school opportunities – offer a comprehensive framework for understanding how education systems can nurture students' environmental agency.

Figure I.5.1. Student environmental agency, as examined in PISA 2025



Student proficiency in environmental science in PISA 2025z

Mean performance in environmental science

In PISA 2025, an environmental literacy subscale was included in the science assessment. Box I.5.1 provides details about the design and content of this new subscale.

Among OECD countries, the average score in environmental science was 480 points. B-S-J-Z (China) and Singapore achieved significantly higher scores than all other participating countries and economies. Chinese Taipei, Macao (China) and Japan also performed at comparatively very high levels. Figure I.5.2 shows each country/economy's mean score.

Box I.5.1. Environmental literacy in PISA: Key concepts and measures

Environmental literacy in PISA is defined as students' capacity to:

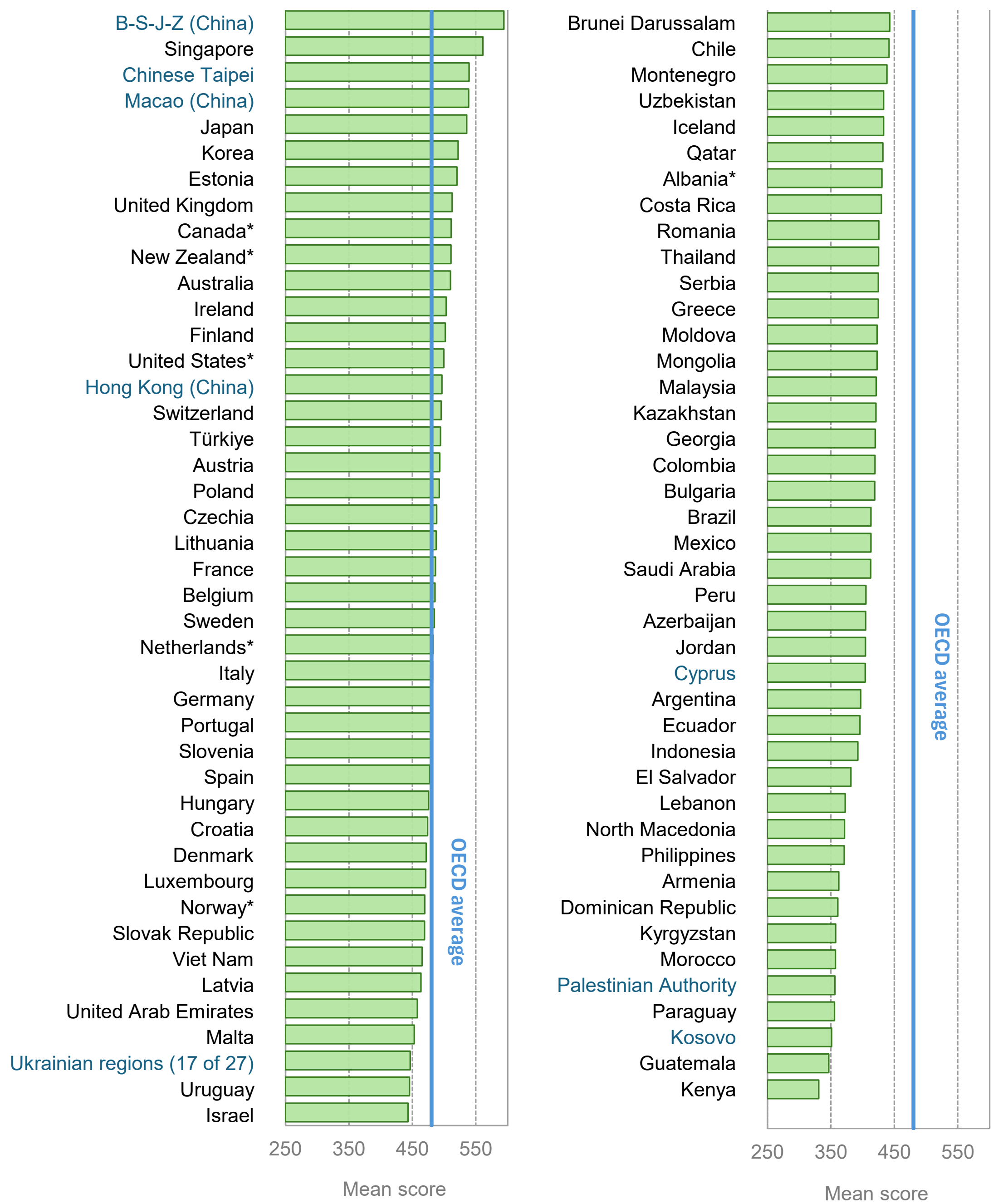
- Explain the impacts of human interactions with Earth's systems (Competency 1).
- Make informed decisions to act based on evaluation of diverse sources of evidence and application of creative and systems thinking to protect the environment (Competency 2).
- Demonstrate hope and respect for diverse perspectives in seeking solutions to socio-ecological crises (Competency 3).

An environmental science scale was developed using a subset of PISA 2025 science test items. This scale draws on content, procedural and epistemic knowledge within the science framework that is clearly related to any science that can be considered to be of an environmental or ecological nature. Given the cognitive focus of the science assessment, only Competency 1 and Competency 2 can be measured through these test items.

To capture students' environmental literacy more comprehensively, additional elements were assessed through the student questionnaire. These items are designed to complement the cognitive measures by addressing broader attitudes, reasoning and decision-making processes relevant to environmental and socio-ecological issues.

Source: (OECD, 2026[1])

Figure I.5.2. Mean score in student performance on environmental science (science subscale)

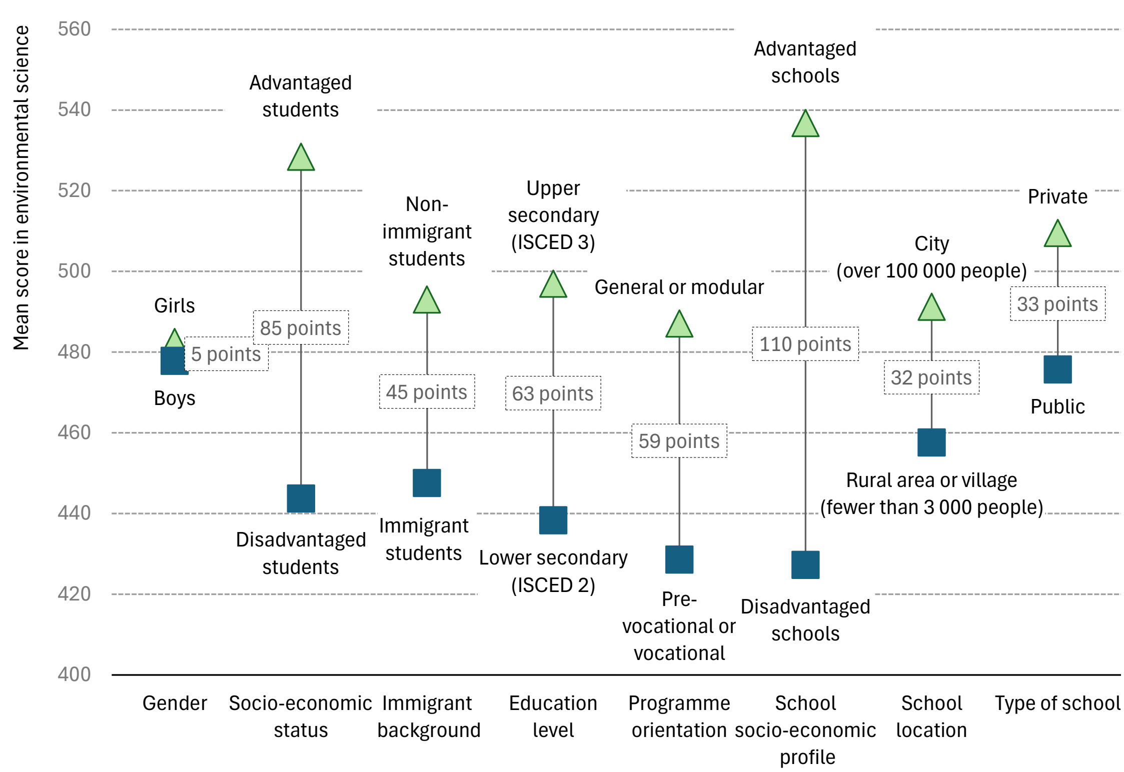


Note: *Countries and economies are ranked in descending order of the mean score in environmental science.*
Source: OECD, PISA 2025 Database, Table I.B1.5.1. See https://stat.link/2miwbs for the underlying data.

As shown in Figure I.5.3, environmental literacy varies markedly across student and school characteristics. For example, in most countries and economies, socio-economically advantaged students outperform disadvantaged students, and students attending schools with an advantaged profile score higher than those in disadvantaged schools. Students without an immigrant background also tend to outperform immigrant students, and students enrolled in urban schools score higher than those in rural schools. Gender differences are more heterogeneous: on average across OECD countries, girls score 5 points higher than boys, and this pattern is observed in 44 countries and economies. However, in 10 countries and economies, boys achieve higher scores than girls, indicating that gender gaps vary substantially across education systems (Table I.B1.5.4).

Figure I.5.3. Disparities in environmental science (science subscale), by student and school characteristics

Mean score in environmental science, by student and school characteristics; OECD average



Note: Score-point differences for each indicator are statistically significant (see Annex A3).
Source: OECD, PISA 2025 Database, Table I.B1.5.4. See https://stat.link/2miwbs for the underlying data.

What students know and can do in environmental science

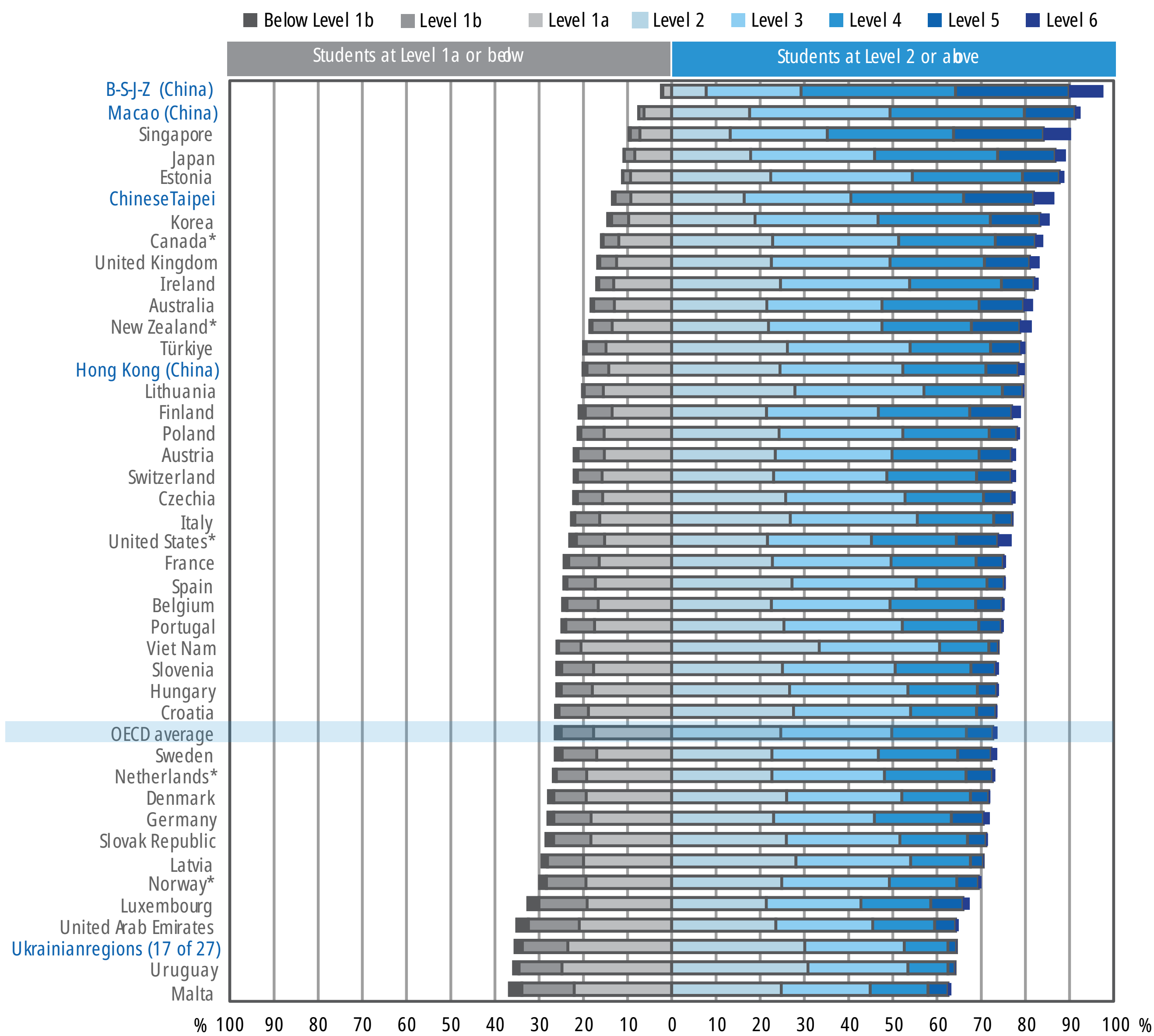
PISA reports student performance through scores on the environmental science scale; however, scores alone do not demonstrate what students can actually do. To provide a meaningful interpretation of student capabilities, PISA groups performance into proficiency levels that describe the types of tasks students at different score ranges can successfully complete. A full description of the competencies associated with each proficiency level of the environmental science scale is provided in the PISA 2025 Technical Report (OECD, forthcoming[2]).

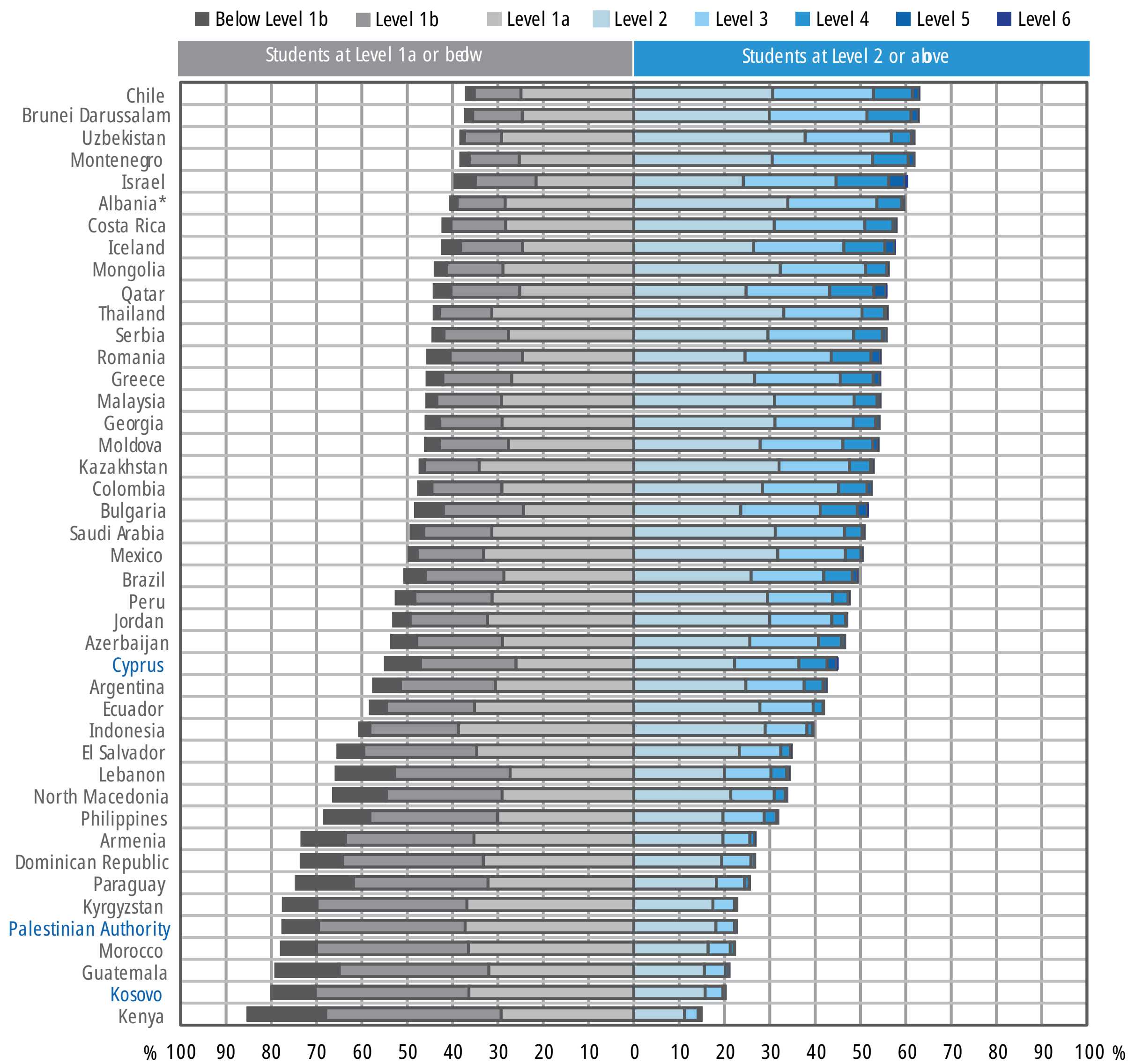
In PISA 2025, the environmental science scale comprises seven proficiency levels;[2] Figure I.5.4 shows how students are distributed across them. Level 2 is defined as the baseline level of proficiency; at this level, students are able to describe how human activities influence Earth systems, whether through intended positive actions or unintended negative consequences. They can also explain how a practical solution to a socio-ecological challenge may affect themselves or their family, and they are able to choose the best justification for a decision that addresses environmental and climate-related risks using simple, clear reasoning. Students who do not attain baseline Level 2 are referred to in this chapter as “low performers”.

On average across OECD countries, about three out of four students achieve at least Level 2 proficiency in environmental science. More than 85% of students in B-S-J-Z (China), Macao (China), Singapore, Japan, Estonia, Chinese Taipei and Korea (listed in descending order of the share achieving the baseline) performed at Level 2 or above.

Conversely, 26% of students did not reach Level 2 in environmental science, on average across OECD countries. In 21 countries and economies, more than half of students failed to reach Level 2; whereas in 13 countries and economies, the share of low performers is below 20% (Table I.B1.5.2).

Figure I.5.4. Student proficiency in environmental science (science subscale)





Note: *Countries and economies are ranked in descending order of the percentage of students who performed at or above Level 2.*
Source: OECD, PISA 2025 Database, Table I.B1.5.2. See https://stat.link/2miwbs for the underlying data.

Environmental attitudes as reported in PISA 2025

Environmental awareness

The level of students' environmental awareness varies by topic. To measure student environmental awareness, students were asked to rate their knowledge of six topics on a four-point scale, as shown in Table I.5.1. On average across OECD countries, over 30% of students reported that they are familiar with the issues of "effects of plastic pollution" and would be able to explain them well, and nearly 30% did so for "extinction of plants and animals". In contrast, the issue of "nuclear waste" shows the lowest level of students' awareness, as only one out of ten students reported that they can explain this well. Between 33% and 45% of students responded that they know something about these six topics and could explain the general issues. The level of students' environmental awareness varies widely across countries and economies, as shown in Figure I.5.o1 (online).

Between 2015 and 2025, students' environmental awareness declined across all five topics that were also assessed in 2015 (Table I.B1.5.9). The topic "effects of plastic pollution" was newly introduced in PISA 2025. The largest decline was observed for "nuclear waste", which fell by 9 percentage points, on average across OECD countries. In 2015, 54% of students reported that they knew something about nuclear waste or were familiar enough with the topic to explain it well, compared to 45% in 2025. This was followed by a 6-percentage-point decline in awareness of "the increase of greenhouse gases in the atmosphere", from 63% in 2015 to 57% in 2025, and of "the consequences of clearing forests for other land use", from 73% to 67%. The remaining two topics, "water shortage" and "the extinction of plants and animals", showed declines of 4 percentage points between 2015 and 2025, from 72% to 68% and from 79% to 75%, respectively.

Table I.5.1. Students' environmental awareness, by topic

Percentage of students, OECD average

	I have never heard of this	I have heard about this but I would not be able to explain what it is really about	I know something about this and could explain the general issue	I am familiar with this and I would be able to explain this well
Effects of plastic pollution	6	18	44	33
Extinction of plants and animals	6	19	45	30
The consequences of clearing forests for other land use	10	23	41	26
Water shortages	8	24	43	25
The increase of greenhouse gases in the atmosphere	15	28	36	21
Nuclear waste	14	41	33	12

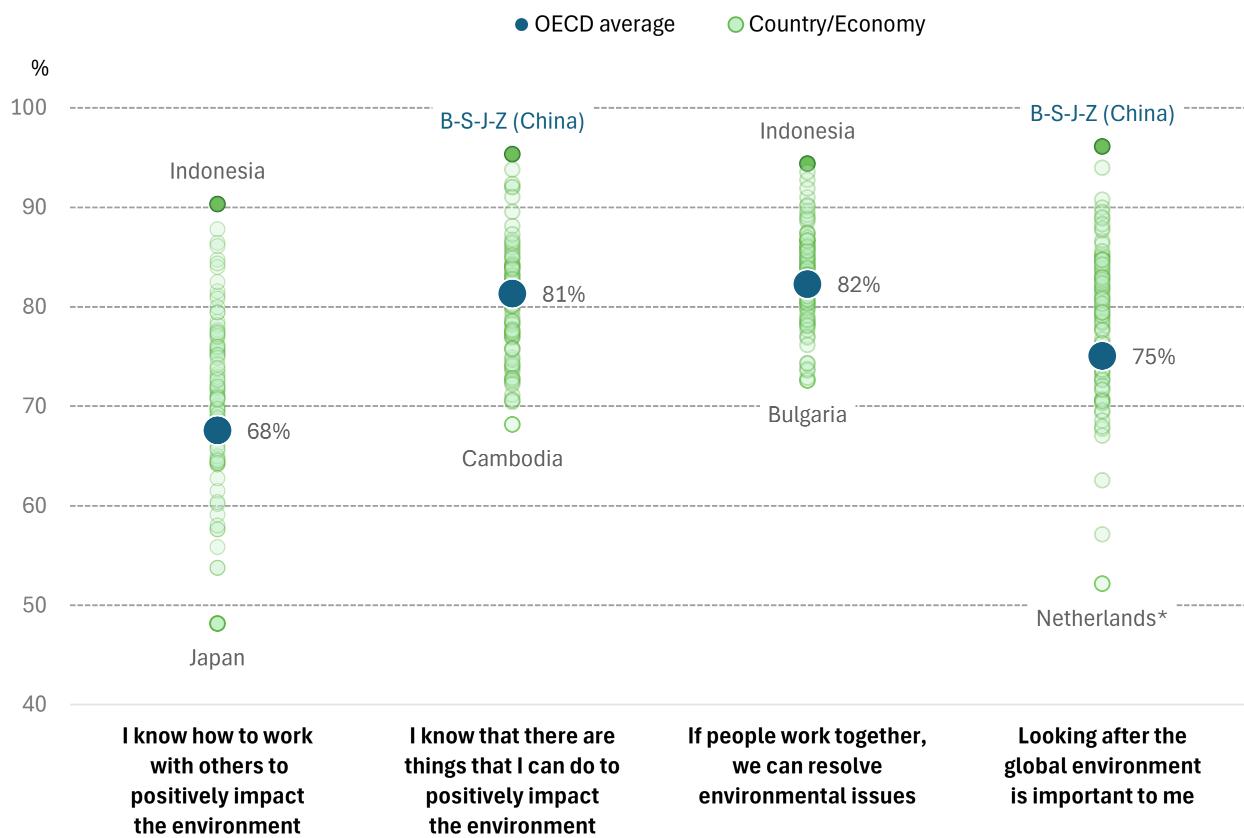
Source: OECD, PISA 2025 Database, Table I.B1.5.6.

Belief in capacity to generate environmental change

As shown in Figure I.5.5, over 80% of students reported that they agree or strongly agree that collective action can solve environmental problems and that they can personally make a positive impact, on average across OECD countries. Furthermore, three out of four students agreed or strongly agreed that "looking after the global environment is important for me". In 42 countries and economies, more than 80% of students agreed with this statement (Table I.B1.5.11). This share is over 90% in B-S-J-Z (China), Indonesia, Korea and Cambodia. Even in the countries with the lowest levels of agreement, over half of students still reported that caring for the environment is important to them. By contrast, fewer students reported knowing how to work with others to achieve positive environmental outcomes (68%). This item also shows considerable variation across countries and economies, with agreement levels ranging widely, from 48% to 90%.

Figure I.5.5. Students' beliefs in their capacity to generate environmental change, by topic

Percentage of students who reported they agree or strongly agree with the following statements



Source: OECD, PISA 2025 Database, Table I.B1.5.11. See https://stat.link/2miwbs for the underlying data.

The overall level of students' beliefs in their capacity to generate positive environmental change, drawing on different aspects discussed earlier, varies widely across countries and economies, as shown in Figure I.5.o2 (online). B-S-J-Z (China) shows, by some distance, the highest level of students' beliefs in their capacity to contribute to change, and Poland and the Netherlands* show the lowest levels. Belief in one's capacity to enact change is closely linked to the hope that there is a way towards a possible future that is worth achieving (White et al., 2023[3]).

Belief in collective environmental efficacy

Around two out of three or more students reported believing in collective agency to resolve environmental issues, as shown in Table I.5.2, on average across OECD countries. For example, 73% of students agreed or strongly agreed with the statement "I believe that by working with my local community we can play an important role in positively impacting the environment". The level of students' belief in collective environmental efficacy varies widely across countries and economies, as shown in Figure I.5.o3 (online).

Table I.5.2. Belief in collective environmental efficacy, by topic

Percentage of students, OECD average

	Strongly disagree	Disagree	Agree	Strongly agree
I believe that by working with my local community we can play an important role in positively impacting the environment	9	19	59	14
I believe that my school and local community can contribute to positively impacting global environmental issues (e.g. climate change, habitat restoration)	12	19	56	13
I believe that by working with my school we can reduce their energy consumption	10	22	54	14
I believe that by working with my local community we can reduce the use of fossil fuels	11	26	51	11

Source: OECD, PISA 2025 Database, Table I.B1.5.18.

Environmental attitudes and performance in environmental science

Students who express more positive environmental attitudes on one measure also tend to report more positive attitudes on other measures, in all participating countries and economies. The strongest relationship is observed between students' beliefs in collective environmental efficacy and their beliefs in their personal capacity to generate environmental change. Some 28% of variation in the former is accounted for by the latter, on average across OECD countries (Table I.B1.5.21). Environmental awareness accounts for some 13% of variation in students' beliefs in their own capacity to generate environmental change (Table I.B1.5.14) and 6% of variation in students' beliefs in collective environmental efficacy (Table I.B1.5.22).

Students who achieve higher scores on the environmental science scale tend to report stronger pro-environmental attitudes. This association is observed across almost all participating countries and economies. As shown in Figure I.5.6, all three pro-environmental attitudes measured in PISA 2025 are positively associated with students' performance in environmental science, although the strength of the relationship varies across them.

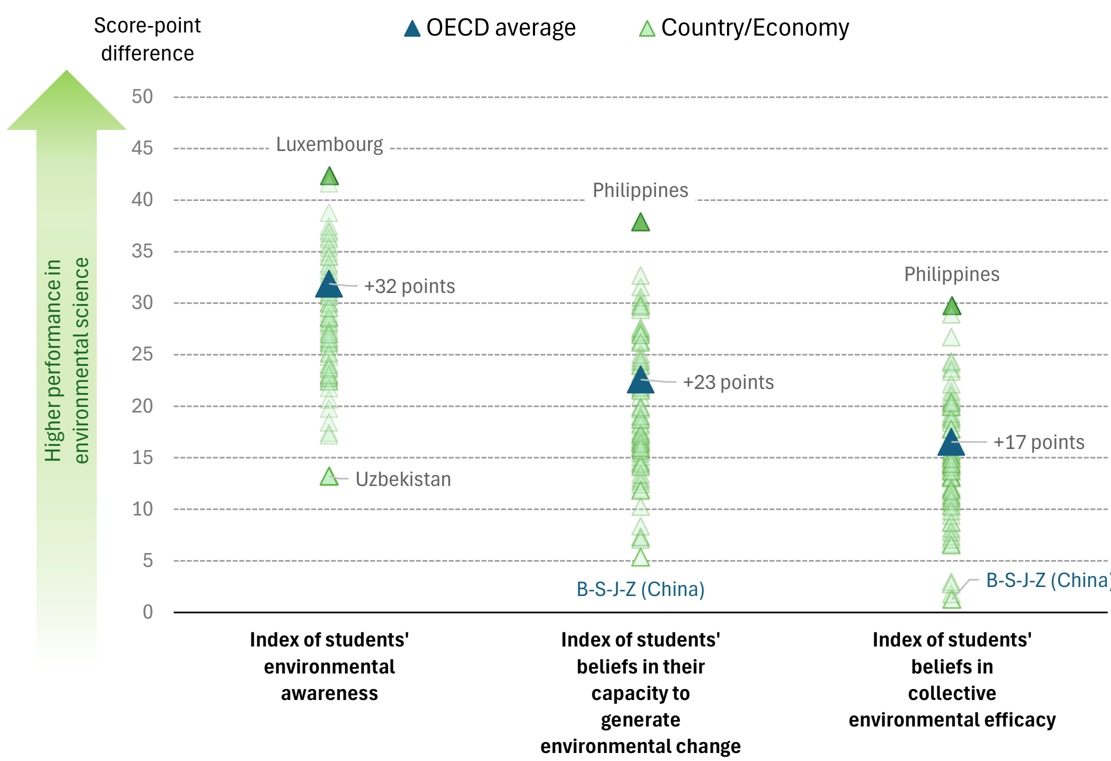
The association is somewhat stronger for environmental awareness, with students who scored higher on this scale performing, on average, 32 points higher on the environmental science assessment than those with lower levels of awareness. This strong association is expected, as environmental awareness reflects students' self-rated knowledge of environmental science. The differences are slightly smaller for the two other attitudes: 23 points for students' beliefs in their own capacity to generate environmental change, and 17 points for beliefs in collective efficacy regarding environmental issues.

Across almost all countries and economies, socio-economically advantaged students and those in more advantaged schools reported more positive levels of environmental attitudes on all three measures than disadvantaged students and schools (Tables I.B1.5.7, I.B1.5.12 and I.B1.5.19). Since the socio-economic profile of students and schools is also associated with performance in environmental science, the relationships between performance and attitudes are examined after accounting for these factors. The positive associations between performance and attitudes remain broadly consistent even when comparing among students and schools with similar socio-economic profiles (Tables I.B1.5.8, I.B1.5.13 and I.B1.5.20).

There are several potential explanations for these positive relationships between performance and attitudes. Students who have a better understanding of environmental issues may be more likely to value and care about them. The reverse may also be true: pro-environmental attitudes might contribute to better learning outcomes, as motivated students are more likely to engage with environment-related material in class, thereby strengthening both their knowledge and their interest in the subject. These two pathways – motivation supporting learning and learning reinforcing attitudes – likely interact in a mutually reinforcing way. Students who care more about environmental issues may engage more deeply in learning, while increased understanding may further strengthen their concerns and sense of importance, producing the consistently positive association observed in PISA.

Figure I.5.6. Pro-environmental attitudes and student performance in environmental science

Change in student environmental science performance associated with a one-unit increase in each index of environmental attitudes; OECD average and countries with largest and smallest differences



Source: OECD, PISA 2025 Database, Tables I.B1.5.8, I.B1.5.13 and I.B1.5.20. See https://stat.link/2miwbs for the underlying data.

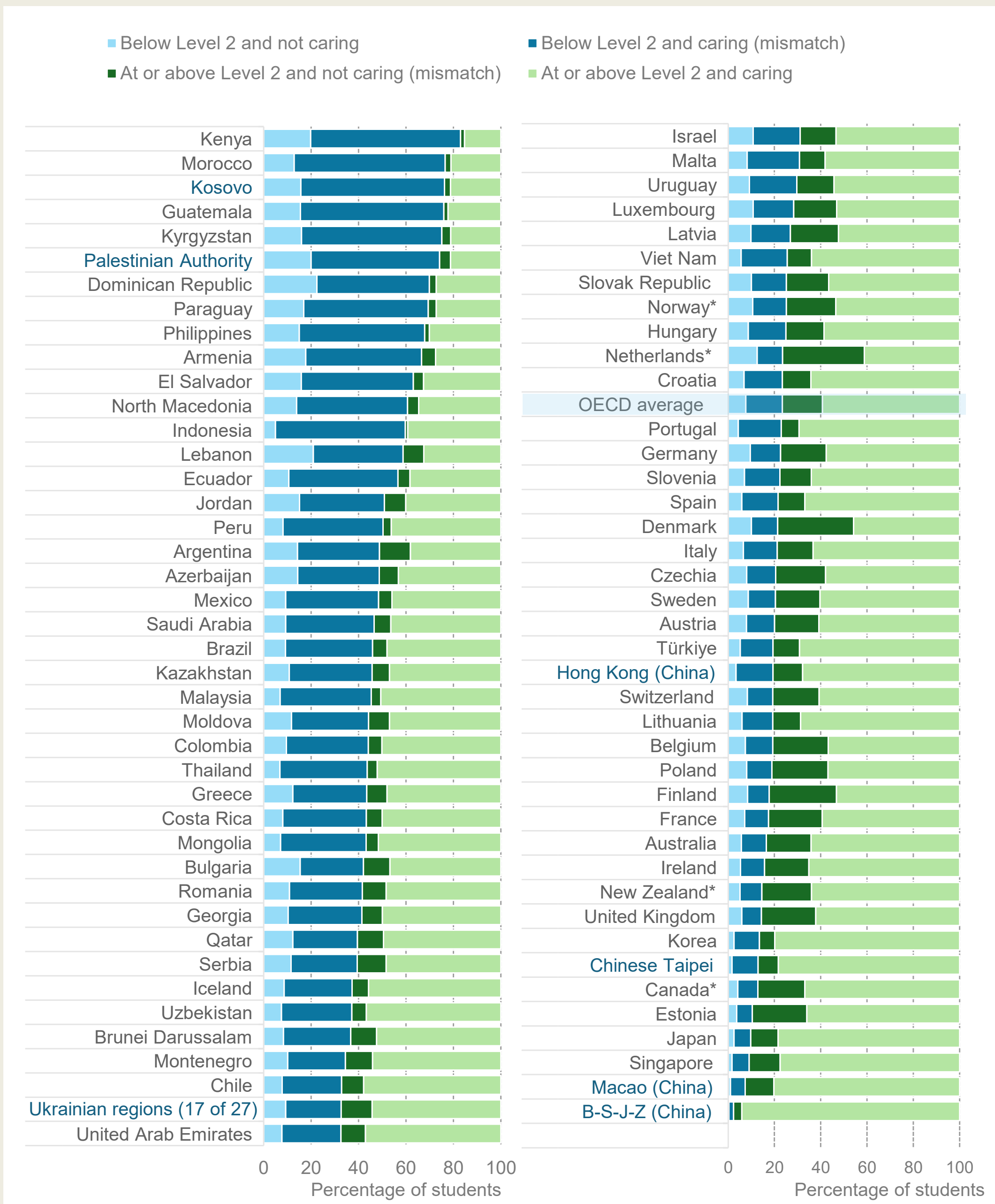
Box I.5.2. Caring without proficiency or proficiency without caring

Despite the general positive association between students' environmental performance and their attitudes shown earlier in this chapter, a non-negligible share of students demonstrates a mismatch between caring and proficiency.

On average across OECD countries, 16% of students show a mismatch of caring without proficiency. These students agreed or strongly agreed that "looking after the global environment is important to me" but did not reach baseline proficiency (Level 2) in environmental science (Figure I.5.7). Another 17% of students show an opposite type of mismatch, which is proficiency without caring. These students reached baseline proficiency level in environmental science but disagreed or strongly disagreed that "looking after the global environment is important to me." Across education systems, the prevalence of these two types of mismatches varies.

Figure I.5.7. Mismatch between proficiency in environmental science and caring for the environment

Percentage of students who display different combinations of proficiency (below or at/above baseline proficiency in environmental science) and care (whether agreed or disagreed that "looking after the global environment is important to me")



Notes: In the legend, *caring* refers to students who (strongly) agreed that "looking after the global environment is important to me*"* and *not caring* refers to those who (strongly) disagreed with this statement.

Countries and economies are ranked in descending order of the percentage of students who performed below baseline proficiency, i.e. Level 2.

Source: OECD, PISA 2025 Database, Table I.B1.5.16. See https://stat.link/2miwbs for the underlying data.

Environmental commitment

Environmental commitment involves the extent to which students translate knowledge and attitudes into concrete behaviours and longer-term engagement. In the short term, this includes whether students engage in everyday actions that demonstrate concerns about sustainability. In the long term, it captures whether students aspire to contribute to environmental protection through their future careers. This approach recognises that there are many ways in which students contribute to environmental well-being. As such, environmental agency involves the capacity to define meaningful objectives, stay engaged over time, and adapt when facing challenges. In other words, agency reflects a commitment to a trajectory of sustained engagement, whatever form that engagement may take. This section uses 15-year-old students' reports on their behaviours and aspirations as proxies for their environmental commitment. A limitation of this approach should be noted as these are not direct measures of lasting environmental engagement.

Environment-related activities

Across PISA countries and economies, the most common environment-related activities reported by students, among the five activities asked about in PISA 2025, are discussing with friends and family how to have a positive impact on the environment and making purchases based on product sustainability. On average across the OECD, 56% of students engaged at least once in environmental discussions in the year prior to the PISA test (Table I.B1.5.24). Similarly, 54% of students reported making sustainability-based purchases. Students who reported that they stopped eating certain foods to reduce their environmental impact is also relatively widespread (OECD average: 40%). In contrast, posting concerns about environmental issues on social media and joining a peaceful march or rally are the least frequently reported activities.

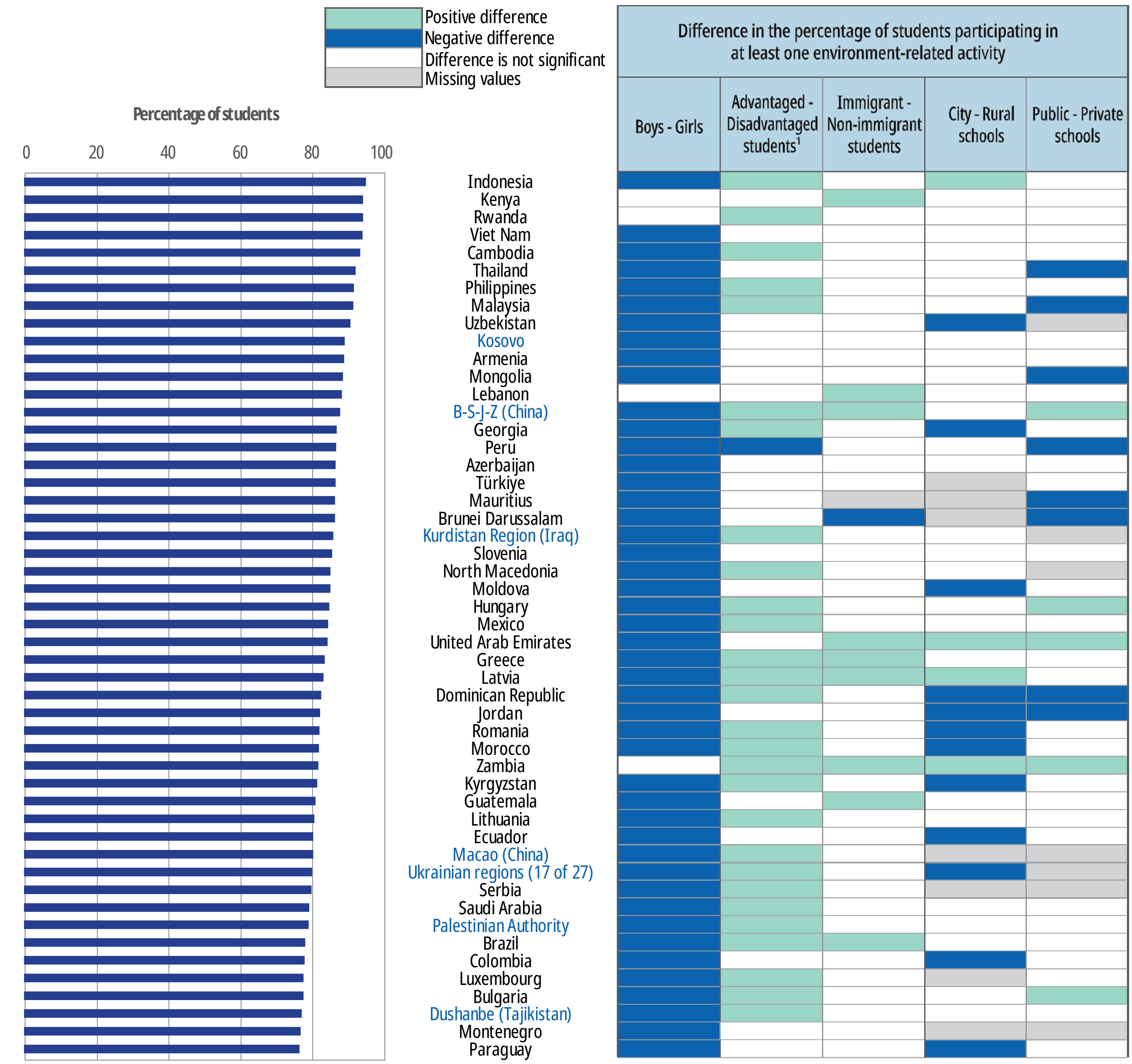
As shown in Figure I.5.8, 72% of students reported that they participated in at least one of the environmental activities among the five activities asked about in PISA 2025. This share reaches over 90% in Indonesia, Kenya, Rwanda, Viet Nam, Cambodia, Thailand, the Philippines, Malaysia and Uzbekistan.

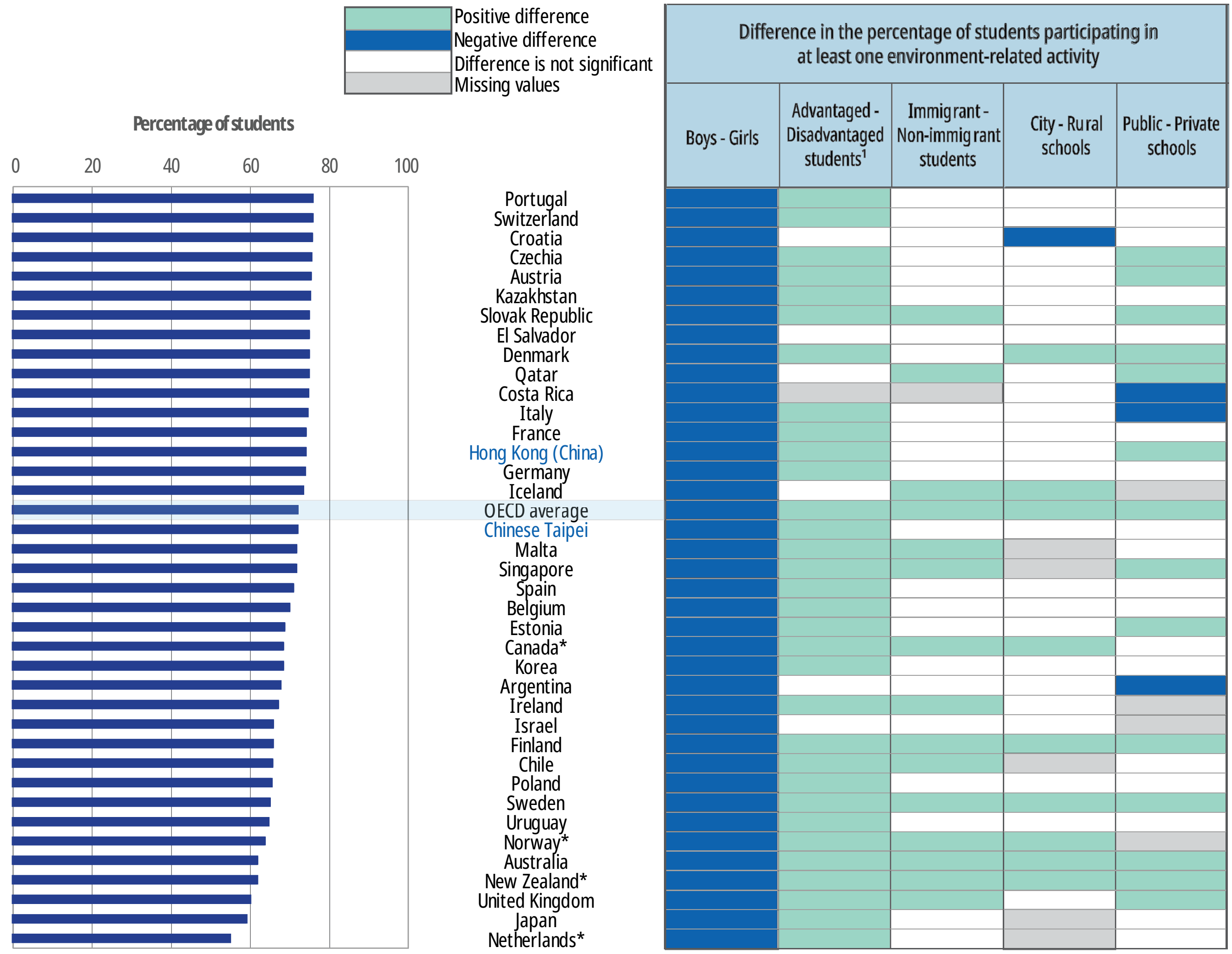
Girls are more likely than boys to report participation in environmental activities in almost all countries and economies, with the largest gender gap favouring girls in Finland and Poland (with a gap of over 20 percentage points; Table I.B1.5.33). Socio-economically advantaged students are more likely to report their participation in environmental activities than disadvantaged students in a majority of countries and economies.

As discussed later in this chapter (Figure I.5.11), students reporting such short-term commitment tended to report more positive attitudes towards the environment in all of the three indicators examined in this chapter in all participating countries and economies, and obtained higher scores in environmental science in about half of participating countries and economies (Table I.B1.5.34).

Figure I.5.8. Students' participation in environment-related activities, by student and school characteristics

Percentage of students who participated in at least one environment-related activity in the year prior to the PISA test





	Boys - Girls	Advantaged - Disadvantaged students[1]	Immigrant - Non-immigrant students	City - Rural schools	Public - Private schools
Countries/economies with a positive difference	0	60	24	13	19
Countries/economies with no difference	4	27	62	51	48
Countries/economies with a negative difference	85	1	1	13	11

1. A socio-economically advantaged (disadvantaged) student is a student in the top (bottom) quarter of the PISA index of economic, social and cultural status (ESCS) in his or her own country/economy.

Countries and economies are ranked in descending order of the percentage of students participating in at least one environment-related activity.

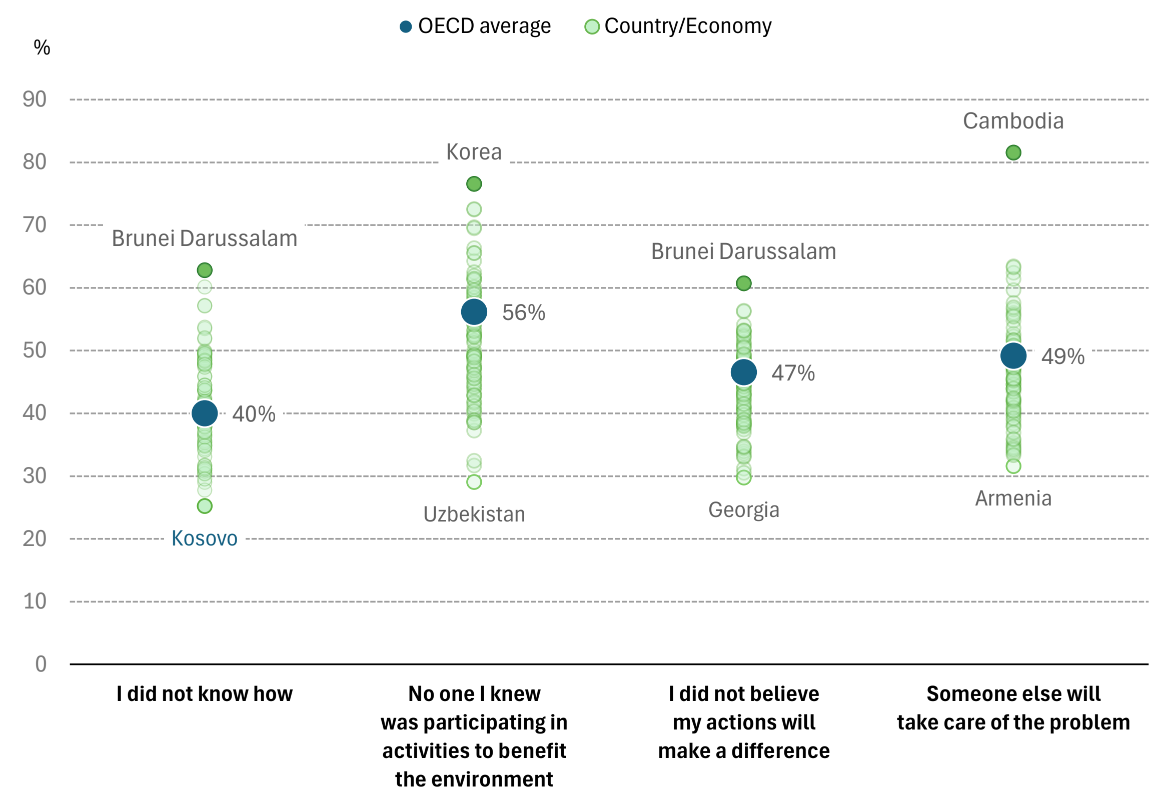
Source: OECD, PISA 2025 Database, Table I.B1.5.33. See https://stat.link/2miwbs for the underlying data.

Reasons for not participating in environment-related activities

As shown in Figure I.5.9, among the 28% students who reported never participating in any of the five environmental activities examined in PISA 2025, the most common reason for non-participation was not knowing anyone engaged in environmental actions: on average across OECD countries, 56% selected this option, with shares ranging from 29% in Uzbekistan to 77% in Korea (Table I.B1.5.35). Two other reasons were also frequently cited: on average across OECD countries, 49% of students said they did not participate because they believed someone else would take care of the problem (with shares ranging from 32% in Armenia to 82% in Cambodia), and 47% said they felt their actions would not make a difference (ranging from 30% in Georgia to 61% in Brunei Darussalam). In addition, on average across OECD countries, 40% of students reported that they did not know how to participate, with national shares ranging from 25% in Kosovo to 63% in Brunei Darussalam.

Figure I.5.9. Reasons for never participating in environmental activities

Percentage of students who did not participate in environment-related activities in the year prior to the PISA test and agreed or strongly agreed with the following reasons for not taking part



Note: Results in this Figure include only students who reported "never" participating in any of the five environmental activities included in the index of students' participation in environment-related activities over the past 12 months.
Source: OECD, PISA 2025 Database, Table I.B1.5.35. See https://stat.link/2miwbs for the underlying data.

Students who reported the statements shown Figure I.5.9 as reasons for their non-participation in environmental activities performed higher in environmental science than those who did not report so, except for the statement "I did not know how", on average across OECD countries (Table I.B1.5.40). Among students who reported never having participated in any of the five environmental activities in the year prior to the PISA test, those who agreed or strongly agreed that "no one I knew was participating in activities to benefit the environment" scored 23 points higher in environmental science than students who disagreed or strongly disagreed with this statement, after accounting for students' and schools' socio-economic profile. The score-point difference for "I did not believe my actions will make a difference" is 9 points, and 5 points for "someone else will take care of the problem". For "I did not know how", no performance difference is observed according to students' agreement with this statement, after accounting for students' and schools' socio-economic profile.

These results suggest that different types of support may be more effective depending on students' performance levels. Lower-performing students may require support in developing knowledge and information about how to participate in environmental activities, whereas higher-performing students may benefit more from exposure to locally relevant examples and role models they can follow, which can help foster a sense of collective efficacy and purpose.

Career expectations to support the environment

For the first time in 2025, PISA asked 15-year-old students to what extent they were interested in contributing to protecting the environment in their future job. The responses reveal a generation that is highly motivated by environmental concerns. In almost all countries and economies, a clear majority of students reported being interested in pursuing an environment-related career to some extent or to a large extent. As shown in Figure I.5.10, in 56 countries, at least 60% of students reported such interest, and in 36 countries and economies, the share reached at least 70%. These results suggest that environmental engagement is not a niche preference but a mainstream aspiration among young people globally.

Gender differences, however, are pronounced. In nearly every country and economy, girls were more likely than boys to express interest in contributing to environmental protection in their careers. On average across OECD countries, 68% of girls and 54% of boys reported being interested, an average gender gap of 14 percentage points. In some education systems, such as Poland, Finland and Czechia, the gap exceeds 20 percentage points, while in only three countries/economies (Kenya, Lebanon and Chinese Taipei) is the gap not statistically significant (Table I.B1.5.42).

Socio-economic differences are present but more modest. In about half of all participating education systems, socio-economically advantaged students are more likely than disadvantaged students to express interest in contributing to environmental protection through their occupations, though the size of the disparity is smaller than the gender gap. On average across OECD countries, 63% of advantaged students and 60% of disadvantaged students reported being interested – an average gap of 4 percentage points – and in several countries and economies, no significant difference was observed (Table I.B1.5.42).

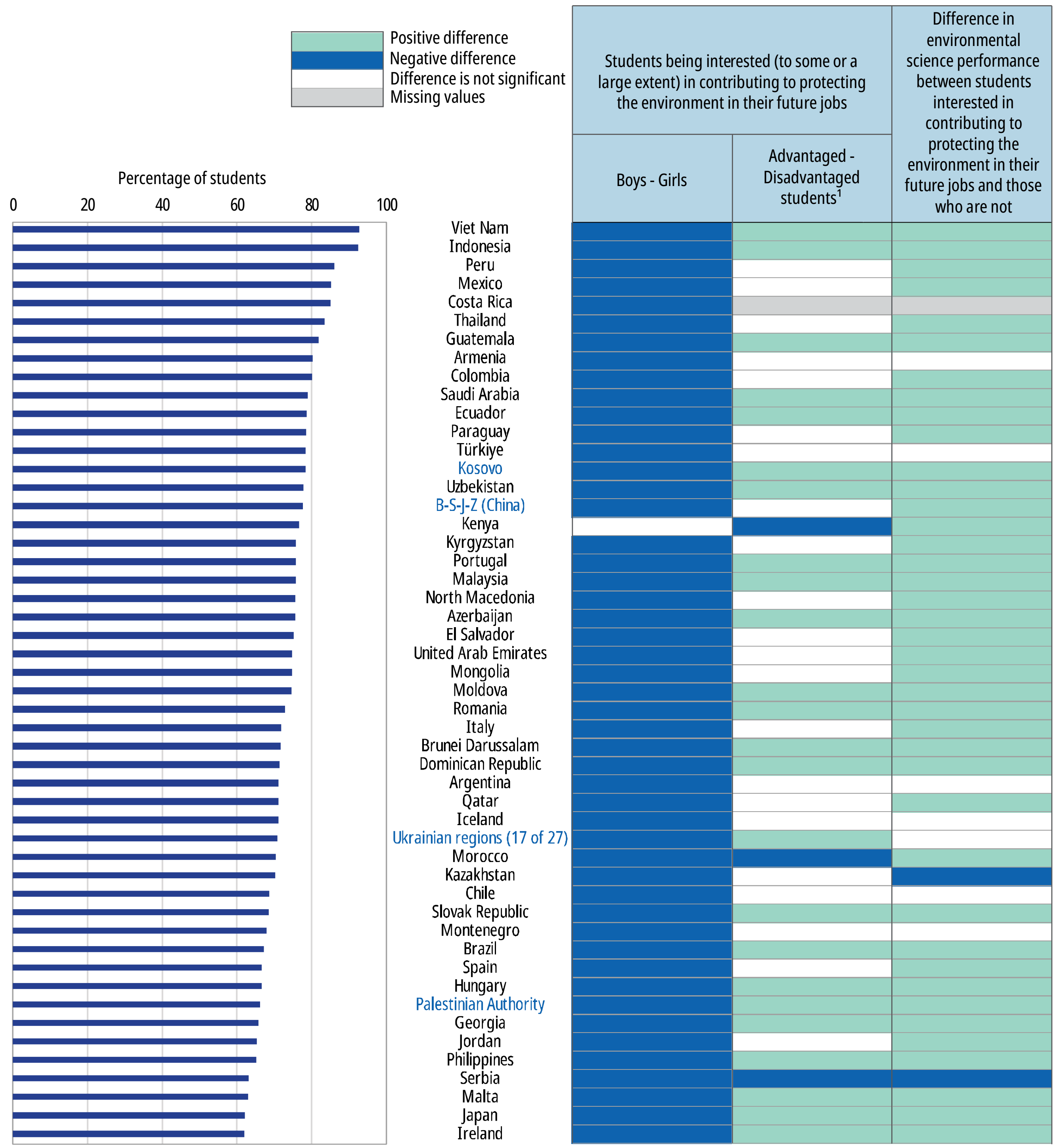
Importantly, students who express interest in contributing to environmental protection through their future work tend to perform higher in most countries and economies (Table I.B1.5.43). Students who reported that they are interested, to some or a large extent, in contributing to protecting the environment in their future job tend to perform higher scores in environmental science as well as in other domains assessed by PISA, including reading, mathematics and science, on average across OECD countries and in most countries and economies. This suggests that students with stronger academic foundations may also be more attuned to global issues and more likely to value environmental protection as part of their future professional identity. Students who are interested in protecting the environment through their future work may have the motivation and perseverance needed to acquire relevant knowledge and skills. While this association does not imply causation, it shows that academic performance and commitment to environmental protection often coexist.

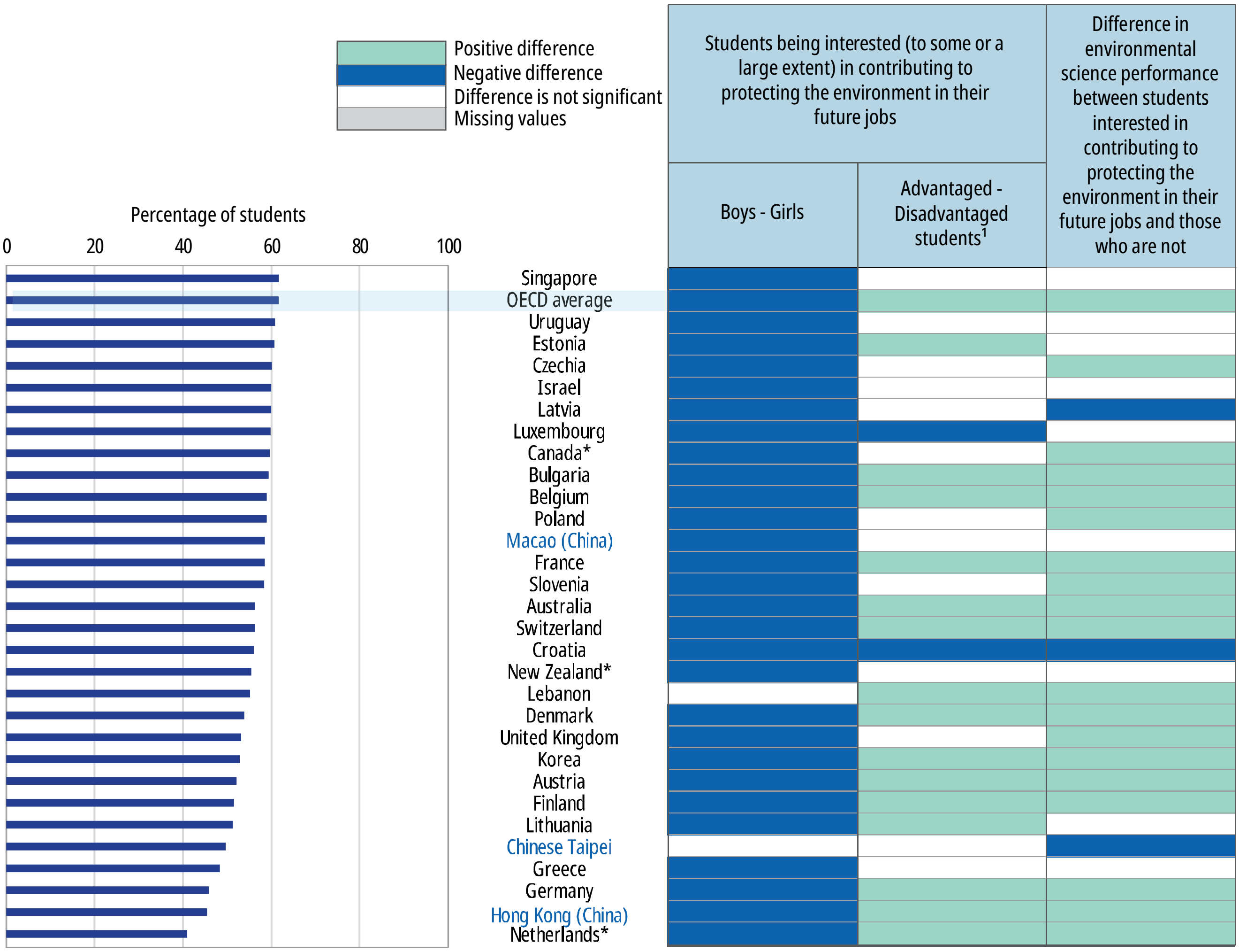
Similarly, students' interest in contributing to protecting the environment through their future occupations tend to report higher levels of attitudes in all countries and economies. This positive relationship is observed in all three attitudinal measures examined in this chapter: environmental awareness (Table I.B1.5.45); students' beliefs in their own capacity to generate environmental change (Table I.B1.5.44) and their beliefs in collective environmental efficacy (Table I.B1.5.46).

Taken together, these findings show that environmental purpose is emerging as a defining element of young people's aspirations, but not all students are equally positioned to translate this purpose into future opportunities. While enthusiasm is widespread, girls show particularly high interest and socio-economic gaps persist. Academically stronger students and students with pro-environmental attitudes are more likely to see environmental protection as part of their future career identity.

Figure I.5.10. Environment-related career expectations, by student characteristics

Percentage of students who reported an interest in contributing to protecting the environment in their future jobs ("to some extent" or "to a large extent")





	Boys - Girls	Advantaged - Disadvantaged students[1]	Difference in environmental science performance
Countries/economies with a positive difference	0	40	59
Countries/economies with no difference	3	35	16
Countries/economies with a negative difference	78	5	5

1. A socio-economically advantaged (disadvantaged) student is a student in the top (bottom) quarter of the PISA index of economic, social and cultural status (ESCS) in his or her own country/economy.
Countries and economies are ranked in descending order of the percentage of students who are interested in contributing to protecting the environment in their future jobs.
Source: OECD, PISA 2025 Database, Tables I.B1.5.42 and I.B1.5.43. See https://stat.link/2miwbs for the underlying data.

Environmental proficiency, attitudes and commitment

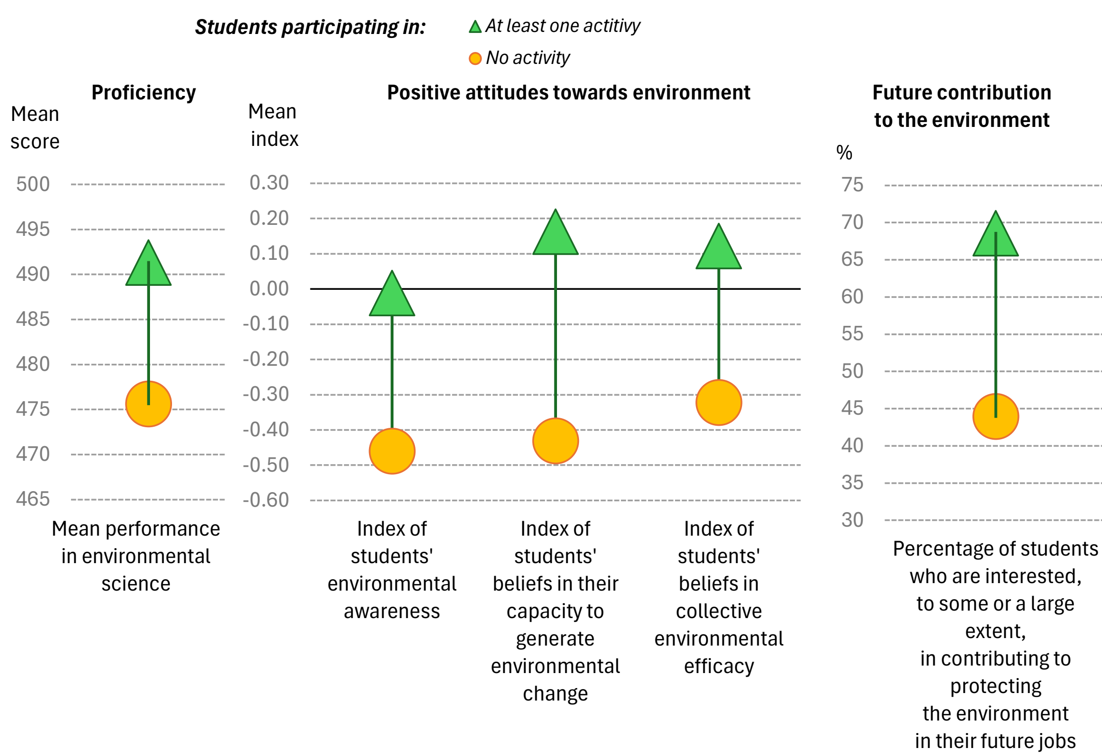
Short-term and long-term environmental commitments are positively related. As shown in Figure I.5.11, students who reported short-term commitment (i.e. participating in at least one of the five environmental activities included in PISA 2025) also tended to report long-term commitment (i.e. interest in contributing to the environment through their future careers).

As previously outlined, students reporting short-term commitment tended to report more positive attitudes towards the environment in all of the three indicators examined in this chapter. These positive relationships are observed in almost all participating countries and economies (Table I.B1.5.34).

When it comes to performance, a positive relationship is less consistent across countries and economies. On average across OECD countries, students who participated in at least one environmental activity outperformed in environmental science those who did not participate in any of the activities. However, this pattern is observed only in about half of the countries and economies with available data, while around ten countries and economies show the opposite pattern, where students who did not participate tend to outperform those who did (Table I.B1.5.34).

Figure I.5.11. Environmental proficiency, attitudes and long-term commitment, by short-term commitment

Various environmental indicators, by students who reported participating in at least one environmental activity in the year prior to the PISA test and those who did not



Note: Difference between students who participated in at least one activity and those who did not is statistically significant for all indicators (see Annex A3).
Source: OECD, PISA 2025 Database, Table I.B1.5.34. See https://stat.link/2miwbs for the underlying data.

Environmentally "caring but not committed" students

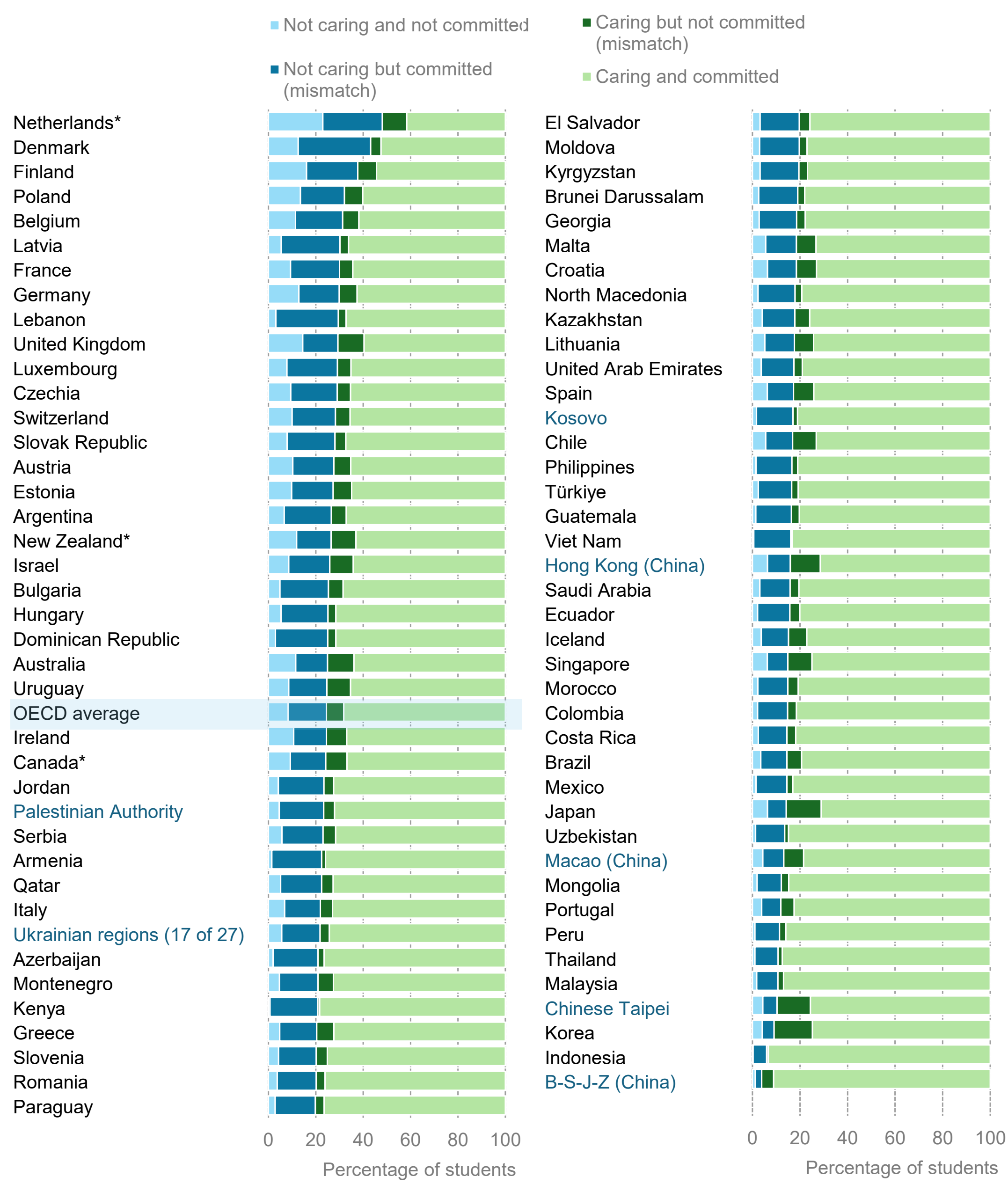
Despite the general positive relationship between pro-environmental attitudes and participation in environment-related activities, some students who express strong pro-environmental attitudes do not translate these attitudes into environmental commitment.

On average across OECD countries, three out of four students reported they care for the environment, meaning that these are the students who agreed or strongly agreed that looking after the global environment is important to them (Figure I.5.12). A large majority of these students (90%) also reported they commit to environmental issues at least in either the short or long term. Short-term commitment is measured by participation in at least one pro-environmental activity. Long-term commitment is measured by students' interest in contributing to environmental protection in their future jobs, reported as "to some extent" or "to a large extent."

However, 7% of 15-year-old students reported caring for the environment but not being environmentally committed, as shown in Figure I.5.12. Such a mismatch between attitudes and commitment was minimal and less than 1% in Viet Nam, Indonesia and Kenya, while it reached up to 16% in Korea.

Figure I.5.12. Mismatch between care for the environment and environmental commitment

Percentage of students who display different combinations of care (whether they agreed or disagreed that "looking after the global environment is important to me") and environmental commitment



Notes: In the legend, *caring* refers to students who (strongly) agreed that “looking after the global environment is important to me” and *not caring* refers to those who (strongly) disagreed with this statement.
Environmentally committed students are those who participated in at least one environment-related activity or are interested in contributing to protecting the environment in their future jobs ("to some extent" or "to a large extent").
Countries and economies are ranked in descending order of the percentage of students who do not care for the environment.
Source: OECD, PISA 2025 Database, Table I.B1.5.17. See https://stat.link/2miwbs for the underlying data.

Boys are more likely to be environmentally “caring but not committed” (9%) than girls (6%), on average across OECD countries and in most participating countries and economies (Table I.B1.5.47). No countries/economies show an opposite pattern. The widest gender gap is found in Korea and Finland, with a difference of over 6 percentage points. In Korea, 19% of boys are environmentally “caring but not committed” compared to 13% of girls. In Finland, 11% of boys are environmentally “caring but not committed” compared to 5% of girls.

Socio-economically disadvantaged students are slightly more likely to be environmentally “caring but not committed” (8%) than advantaged students (7%), on average across OECD countries. But this pattern is observed only in one-third of countries and economies with available data. The majority of countries and economies do not show socio-economic difference, and four countries and economies show an opposite pattern, in which advantaged students are more likely to be environmentally “caring but not committed” than disadvantaged students (Table I.B1.5.47).

Performance in environmental science also differs between “caring and committed” and “caring but not committed” students, but there is no consistent pattern across countries and economies. On average across OECD countries, environmentally “caring and committed” students tend to outperform those who are “caring but not committed”, but this pattern is observed in about one-third of the countries and economies while more than half show no difference (Table I.B1.5.48).

When it comes to learning opportunities in class, differences between these two groups are clearer and more consistent. While students’ reports on their opportunities for environmental learning in class are described in detail in the next section, a consistent pattern is observed across all countries and economies; environmentally “caring and committed” students reported that they have more opportunities for environmental learning in class than those who are “caring but not committed” (Table I.B1.5.49). For example, 49% of “caring and committed” students agreed or strongly agreed that their class discusses solutions to environmental issues, while 34% of “caring but not committed” students did so (Table I.B1.5.51). This result suggests the important role that schools can play in enhancing students’ environmental agency, helping to bridge students’ pro-environmental attitudes and their commitment to protecting the environment.

School opportunities for environmental learning and action

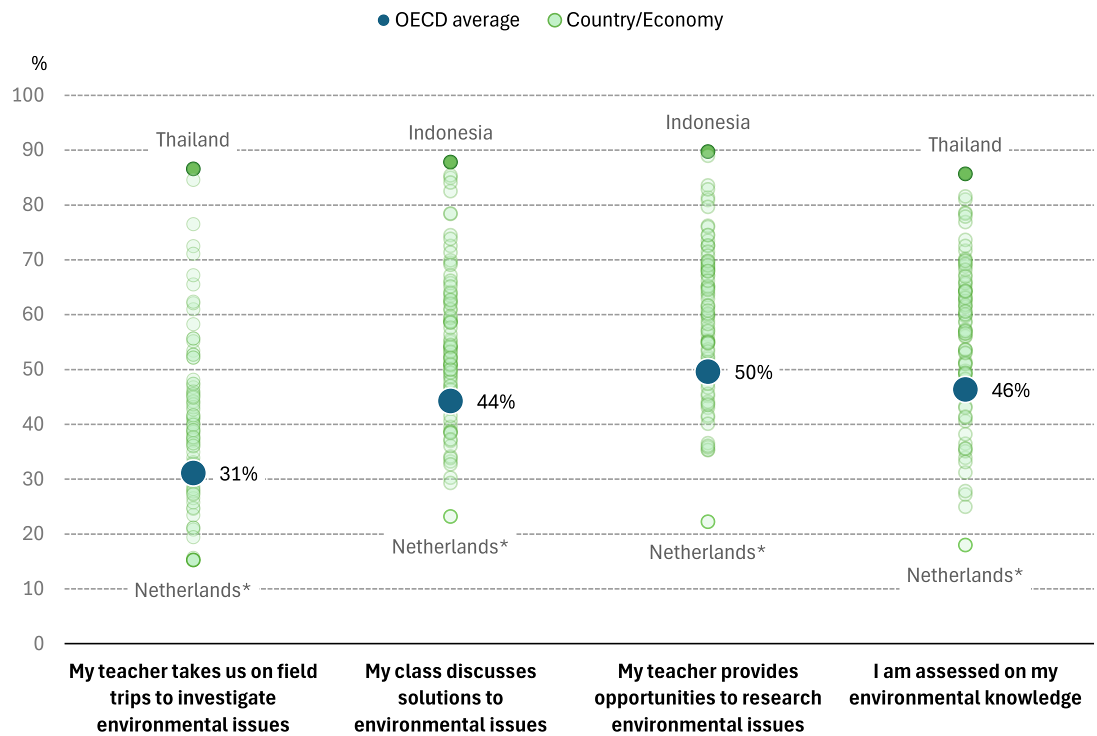
Opportunities for environmental learning in class

The opportunities for environmental learning in class can play an important role in shaping students’ environmental science literacy, attitudes and commitment by increasing their exposure to environmental issues through structured classroom activities.

As shown in Figure I.5.13, classroom-based activities tend to be more commonly reported by students than field trips. At the same time, participation rates differ markedly across countries and economies, highlighting considerable variation in students’ access to structured environmental learning opportunities across education systems.

Figure I.5.13. Opportunities for environmental learning in class, by type

Percentage of students who agreed or strongly agreed with each statement



Source: OECD, PISA 2025 Database, Table I.B1.5.54. See https://stat.link/2miwbs for the underlying data.

Figure I.5.14 shows the overall extent to which students are exposed to environmental learning opportunities within their regular classroom activities. There are wide differences across countries and economies, with the highest levels of exposure reported in Thailand, Indonesia, B-S-J-Z (China), Viet Nam and Malaysia, and the lowest in the Netherlands*, Belgium, Luxembourg, Germany, Austria and Japan, based on students' reports.

Students enrolled in socio-economically disadvantaged schools reported having more opportunities for environmental learning in class compared to students in advantaged schools, on average across OECD countries and in about half of countries and economies with available data (Table I.B1.5.55). In contrast, in seven countries and economies, students in advantaged schools reported greater exposure to such opportunities. Similarly, students in rural schools reported more opportunities for environmental learning compared to those in urban schools, on average across OECD countries and in 34 countries and economies. The opposite pattern was observed in five countries and economies.

Figure I.5.14. Opportunities for environmental learning in class, by country/economy

Note: The index of opportunities for environmental learning in class (OPENVLRN) is based on students' reports of how frequently environmental topics are integrated into teaching and assessment. It is constructed from students' self-reported agreement with the statements shown in Figure I.5.13.
Source: OECD, PISA 2025 Database, Table I.B1.5.54. See https://stat.link/2miwbs for the underlying data.

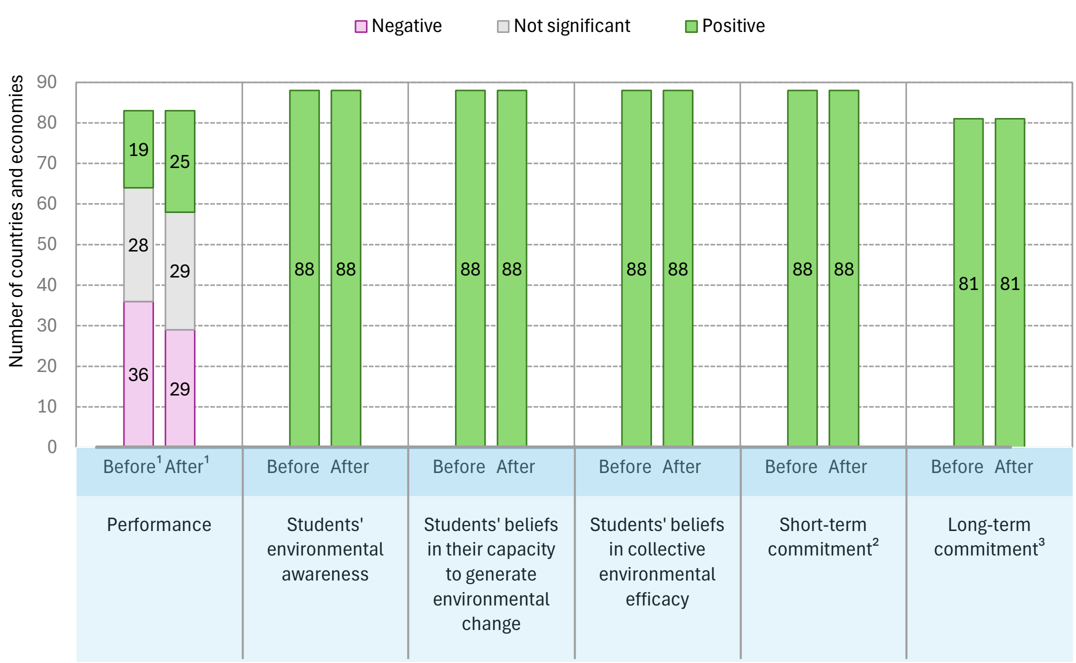
Students who reported encountering more environmental learning opportunities in class tend to hold more pro-environmental attitudes, as shown in Figure I.5.15. Opportunities for environmental learning in class show consistent positive associations with pro-environmental attitudes. In every participating country and economy, students who reported more frequent classroom opportunities to discuss, investigate, research or be assessed on environmental issues display higher environmental awareness, stronger beliefs in their own capacity to generate environmental change, and greater collective environmental efficacy, even after accounting for students' and schools' socio-economic profile (Table I.B1.5.57).

Furthermore, opportunities for environmental learning in class are consistently associated with students' short- and long-term environmental commitment in all countries and economies with available data (Table I.B1.5.58). Short-term commitment is defined here as students who reported participating in the past year in at least one environment-related activity out of five activities examined in PISA 2025. Long-term commitment is defined through their interest in contributing to environmental protection in their future jobs. This association remains significant even after accounting for students' and schools' socio-economic profile.

In contrast, the associations between opportunities for environmental learning in class and students' performance in environmental science are more mixed (Table I.B1.5.56). After accounting for students' and schools' socio-economic profile, the relationship with performance is positive in slightly less than one-third of countries/economies, negative in another one-third as well as on average across OECD countries, and not statistically significant in the remaining one-third, pointing to considerable cross-national heterogeneity. This finding should be interpreted with caution and should not be interpreted as a causal relationship. Also, it is important to note that the measure of opportunities for environmental learning in class captures the presence of these environmental learning opportunities in classrooms, but does not capture their quality, pedagogical intensity or the amount of time students are exposed to them.

Figure I.5.15. Environmental learning opportunities and three dimensions of environmental agency

Number of countries and economies with positive, negative or no significant relationships between learning opportunities and three dimensions of environmental agency (performance, attitudes and commitment)



1. "Before" refers to regressions before accounting for students' and schools' socio-economic profile (measured by the PISA index of economic, social and cultural status (ESCS)). "After" refers to regressions after accounting students' and schools' socio-economic profile.
2. "Short-term commitment" refers to the percentage of students who reported participating in at least one environment-related activity in the year prior to the PISA test.
3. "Long-term commitment" refers to the percentage of students who reported being interested, to some or a large extent, in contributing to protecting the environment in their future jobs.
Source: OECD, PISA 2025 Database, Tables I.B1.5.56, I.B1.5.57 and I.B1.5.58. See https://stat.link/2miwbs for the underlying data.

A plausible explanation for this positive association with attitudes and commitment is that classroom opportunities make environmental issues more visible and personally meaningful to students. Discussing challenges, exploring solutions or engaging with environmental topics in class may encourage students to reflect on these issues and see themselves as capable of taking action. Such experiences can strengthen interest, concern and a sense of social responsibility – aspects closely linked to the environmental attitudes reported earlier in this chapter – and may, in turn, motivate students to participate in environment-related activities. However, just providing environmental learning opportunities as described Figure I.5.13 may not be enough, as these learning opportunities are not systematically related to higher environmental science performance. These results suggest environmental learning opportunities need to be combined with effective teaching and learning to enhance students' environmental science performance and to fully develop the three dimensions of environmental agency.

Table I.5.3. PISA 2025 figures and tables in Chapter 5

Figure I.5.1		Student environmental agency, as examined in PISA 2025
Figure I.5.2		Mean score in student performance on environmental science (science subscale)
Figure I.5.3		Disparities in environmental science (science subscale), by student and school characteristics
Figure I.5.4		Student proficiency in environmental science (science subscale)
Table I.5.1		Students' environmental awareness, by aspect
Figure I.5.5		Students' beliefs in their capacity to generate environmental change, by topic
Table I.5.2		Belief in collective environmental efficacy, by topic
Figure I.5.6		Pro-environmental attitudes and student performance in environmental science
Figure I.5.7		Mismatch between proficiency in environmental science and caring for the environment
Figure I.5.8		Students' participation in environment-related activities, by student and school characteristics
Figure I.5.9		Reasons for never participating in environmental activities
Figure I.5.10		Environment-related career expectations, by student characteristics
Figure I.5.11		Environmental proficiency, attitudes and long-term commitment, by short-term commitment
Figure I.5.12		Mismatch between care for the environment and environmental commitment
Figure I.5.13		Opportunities for environmental learning in class, by type
Figure I.5.14		Opportunities for environmental learning in class, by country/economy
Figure I.5.15		Environmental learning opportunities and three dimensions of environmental agency
Figure I.5.o1	WEB	Students' environmental awareness, by country/economy
Figure I.5.o2	WEB	Students' beliefs in their capacity to generate environmental change, by country/economy
Figure I.5.o3	WEB	Belief in collective environmental efficacy, by country/economy

StatLink https://stat.link/2miwbs

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OECD (forthcoming), *PISA 2025 Technical Report*, OECD Publishing, Paris. [2]

White, P. et al. (2023), "Agency in the Anthropocene: Supporting document to the PISA 2025 Science Framework", *OECD Education Working Papers*, No. 297, OECD Publishing, Paris, https://doi.org/10.1787/8d3b6cfa-en. [3]

Notes

[1] Environmental science items constitute a subset of the items used to construct the science scale, presented in Chapter 2.

[2] When science proficiency levels were first introduced in PISA 2006, they were defined across six levels, from Level 1 to Level 6. In PISA 2015, with science as the main domain for the second time, Level 1 was further subdivided into Level 1a and Level 1b to provide a more nuanced description of performance at the lower end of the proficiency scale.

Annex A1. Trends in reading scores over three PISA cycles (2018-2025)

Mean reading performance in PISA assessments declined significantly between 2018 and 2025 in a vast majority of countries and economies; a trend that is more often negative and steeper than what is observed in mathematics and science. For example, on average across 35 OECD countries with comparable data, 15-year-old students' mean performance in reading dropped by 11 score points between 2018 and 2022, and by a further 14 points between 2022 and 2025 (25 points in total between 2018 and 2025). When considering this seven-year period and all PISA participants, about three out of four countries and economies (56 out of 74 with comparable data) show significant declines in mean reading performance, and only five countries/economies – all of them still performing significantly below the OECD average – improved (Table I.B1.2a.50). These sobering results warrant a closer investigation, to confirm that results reflect what students know and can do, and to identify possible causes underlying these trends.

This annex presents further evidence to corroborate the reality of the trends reported in Chapter 2 of this report, and to further dissect and contextualise these trends. It will start with a short summary of the main findings from Chapter 2. The focus on reading and on the 2018-2025 period allows to compare not only overall test scores, but also to examine changes in how students engaged with different reading tasks at a granular level.

Trends in reading scores from 2018-2025: A period of widespread decline

Between 2018 and 2025, mean reading scores declined by 25 score points on average across 35 OECD countries (Table I.B1.2a.37). Using the estimates of the yearly learning gain of students as a benchmark (Box I.2.4), this implies that 15-year-old students in 2025 were performing in reading at the level that could be expected of 14-year-olds just seven years earlier; in other words, their development of reading competence was lagging behind by one year, at a minimum.

Over a longer period, and although not all trajectories for individual countries follow this pattern, the average trajectory followed by OECD countries is one of accelerating decline, with small negative changes before 2018 (starting around 2012), followed by large drops between 2018 and 2022, and then again between 2022 and 2025 (Figure I.1.5).

When performance trends for different subjects are compared, countries' and economies' relative standing is remarkably consistent; even though reading trends are more often negative than mathematics or science trends. Countries and economies that had the most severe drops in reading also tended to experience larger drops in mathematics and science; in turn, countries and economies that improved in science often had non-significant changes (or less dramatic drops) in reading performance. The strength of the association (as measured by the linear correlation coefficient) between countries'/economies' reading and science trends over the 2018-25 period is .79; and .82 between reading and mathematics trends (Tables I.B1.2a.36, I.B1.2a.37 and I.B1.2a.38). This suggests that common factors influence student learning in all subjects; the highly correlated trends also reflect the central place of reading in the other PISA assessment domains. In mathematics, for example, PISA does not assess only procedural knowledge, but emphasises students' capacity to apply mathematical knowledge and reasoning to real-world situations, which are presented to them in the form of written texts.

Differences in reading trends within countries and economies

In many countries, performance gaps between the highest-performing and the lowest-performing students widened between 2018 and 2025, as they did on average across OECD countries (Table I.B1.2a.43). However, the spread of performance increased only modestly in comparison to the changes in levels of performance: performance levels moved almost parallel to the average trend both at the top of the distribution (-21 points at the 90th percentile) and at the bottom (-28 points at the 10th percentile), on average across 35 OECD countries (Table I.B1.2a.40).

More surprisingly, perhaps, are the trends observed across different quarters of socio-economic status. Indeed, over the 2018-2025 period, the largest drops were observed among the most advantaged quarter of socio-economic status, and the socio-economic gap with the most disadvantaged students reduced somewhat (by 11 points, on average across 35 OECD countries: from 88 score points in 2018 to 77 points in 2025). Between 2018 and 2025, the socio-economic gap in reading performance narrowed in 36 countries and economies, and widened only in two (Croatia and Zambia) (Table I.B1.2b.23).

Taken together, these two findings suggest a new phenomenon wherein a group of students from relatively affluent families, but who struggle academically, are contributing most to the overall decline in mean scores.

The negative trends in reading, however, are so pervasive that no single group of students appears to be immune from them; and, at the same time, no single group of students can be claimed to be solely responsible for the decline. Understanding differences in the extent to which different groups of students were affected by the declines can facilitate the search for the root causes; this should not be an end in itself, in an attempt at assigning blame. More specifically, any hypothesis about the causes – whether global or national – must be tested against the observed patterns to see whether it plausibly explains them or conflicts with how those causes would be expected to affect different groups.

With these notes of caution in mind, the next paragraphs describe differences across genders and across students with different immigration backgrounds.

Trends were similar for both boys and girls, on average across 35 OECD countries, and when considering the full 2018-2025 period (Table I.B1.2c.28).

The gap between immigrant students and non-immigrant students also did not change significantly – suggesting parallel trends for both immigrant and non-immigrant students – in the vast majority of countries with a substantial population of students with an immigrant background (more than 5% of students in each cycle, starting with 2018; see Table I.B1.2d.1), and where the overall trend in mean reading performance is negative (Table I.B1.2d.8). This pattern is observed on average across 29 OECD countries with significant proportions of immigrant students; and, individually, in 22 of the 31 countries/economies with available data that meet the two conditions (high immigrant population size and negative overall trends).

A clear pattern of widening gaps between immigrant and non-immigrant students, driven by more negative trends among immigrants (over the 2018-2025 period), is only observed in seven countries and economies with an overall negative trend in reading: Argentina, Croatia, Israel, Latvia, Lebanon, North Macedonia and Serbia. At the same time, even in the remaining countries/economies, the overall trend is often more pronounced than the trend among immigrants or among non-immigrants, considered separately. In some cases, such as in the Netherlands*, the overall trend is significantly negative, but trends for each sub-population separately are not flagged as significant (Table I.B1.2d.8). This is because, in addition to the within-group trends, the overall trend is also influenced by the changing composition of the population. In many OECD countries, the proportion of students with an immigrant background increased significantly between 2018 and 2025, with a marked increase in the number of first-generation immigrant students whose families arrived in the country after their birth and, often, after they had already started school in another country (Table I.B1.2d.1). When this is observed, it can be concluded that the overall trend would have been somewhat more positive, had the proportions of immigrant and non-immigrant students stayed constant.

In particular, among countries where immigrant students scored significantly below non-immigrants in PISA 2025, and where they represented at least 5% of the total population throughout the 2018-2025 period, the proportion of students with an immigrant background increased by more than 3 percentage points in Portugal, Germany, Norway*, Ireland, Slovenia, Iceland, Austria, Switzerland and France (in descending order of that increase) (Tables I.B1.2d.1 and I.B1.2d.8). While the performance gap with non-immigrant students remained stable in many of these countries, the size of this gap, combined with the growing share of students from the lower-performing group, can account for a small portion of the negative trend in reading performance. In other words, the trend would have been less pronounced, had there not been an increase in the proportion of students with an immigrant background in these countries/economies.

The change in mean scores that can be explained merely by the changing composition of the student body, however, never exceeds a few points. Such demographic changes are never the main driving force behind the large trends observed. For example, on average across 29 OECD countries, the proportion of students with an immigrant background increased by 3.8 percentage points between 2018 and 2025 (Table I.B1.2d.1). During this period, the gap between immigrant students and non-immigrant students remained around 40 score points, and reading performance declined by 25 score points (Table I.B1.2d.8). A simple multiplication suggests that out of these 25 points, about 1.5 points (0.038 × 40) can be attributed merely to the changing composition of the student body. A similar calculation for Portugal, for example, would suggest that about 3 points (0.113 × 32) out of 30, can be explained by the growing portion of immigrant children in the student population.

Are PISA trends consistent with trends observed in other international assessments of reading?

PISA is the only international assessment of reading proficiency of students around the age of 15. Many countries and economies that participated in PISA 2025, however, also participate in the International Association for the Evaluation of Educational Achievement's Progress in International Reading Literacy Study (PIRLS), which assesses primary-school students towards the end of Grade 4. PIRLS is repeated every five years, and its most recently published results are based on data collected in 2016 and 2021 (Mullis et al., 2023[1]).

Although there are significant differences in how the two assessments define their target populations (as a grade-based population in PIRLS, and as an age-based population in PISA) and what they assess in reading (reflecting the younger age of students assessed in PIRLS),[1] an approximate correspondence can be established between the cohorts that participated in PIRLS and those that participated in PISA. For example, students who were at the end of Grade 4 in 2016 mostly turned 10 in that year; and would therefore become eligible for participation in PISA some six years later, in 2022.

PISA 2025 mean scores for countries and economies are highly correlated with PIRLS 2021 mean scores across 27 participants who took part in both assessments (r = 0.74). The largest deviation in relative results is observed in Bulgaria, which scored much lower in PISA than what could be expected based on its students' results in PIRLS.

Differences between PIRLS results in 2016 and 2021 often tend to anticipate differences that are observed, in older students, between 2022 and 2025 in PISA (r = 0.34, n = 23). Even though the correlation among trends is much weaker than for mean scores, most of the countries/economies that observed negative trends in PIRLS between 2016 and 2021 also observed negative trends in PISA between 2022 and 2025; and on average across 23 countries/economies that participated in all four assessments, results declined both in PIRLS and in PISA. A few countries/economies saw declining results in PISA in spite of stable (Australia, France and Hong Kong (China)) or even improving (Singapore) results in PIRLS. Still, for the majority of countries and economies, the most recent results in PISA were foreshadowed by the results of similar cohorts at a younger age, when they were assessed in PIRLS. This suggests that the root cause of the recent declines observed in PISA could, in these cases, be plausibly found in the earlier childhood years of today's 15-year-olds, and do not necessarily reflect post-2022 phenomena.

Where did students' performance decline in the PISA test?

The PISA 2025 reading test is based on the PISA 2018 reading test, whose development was guided by the framework revision undertaken between 2015 and 2017. In particular, the reading tasks that students had to solve in 2025 were already used in the two previous assessments (if not for longer), and the overall assessment experience of students was very similar to those of 2018 and 2022. This offers an opportunity to examine changes in student performance on a large number of indicators (i.e. through multiple numerical measures, each providing a somewhat different insight), and in a highly controlled setting, not confounded by differences in test design and task content.

To dissect the overall reading trend into smaller components and identify the driving forces behind each country or economy's trend, these indicators are derived first at the level of individual items, then combined over items that share common characteristics, in order to identify patterns. The main item-level indicator of performance is the weighted percent-correct score, which corresponds to the estimated percentage of the 15-year-old population that successfully answered the item. Several indicators are derived from this through simple functional transformations (in particular, success odds and their logarithm). Because of the adaptive nature of the test, harder tasks were more frequently given to higher-performing students; and conversely, easier tasks were more frequently given to lower-performing students. Annex A3 explains how percent-correct scores for a representative population of 15-year-old students can be computed from the PISA reading test for all items, in spite of its adaptive nature.

Average success rates (percent-correct scores, hereafter, P+) on reading items are consistent with the overall trends reflected in mean scores on the PISA reading scale. In countries with strong negative trends for mean scores, success rates declined the most; in countries with non-significant or even positive trends in mean scores, they declined the least or even increased. The correlation between differences in average P+ rates and differences in mean scores is 0.91 for 2022-2025 comparisons; and 0.90 for 2018-2025 comparisons (Table I.A1.7).

Student performance throughout the reading test

Average success rates can be similarly computed over smaller sets of items. In particular, it is possible to compute, and compare, success rates over items that were administered in the first, non-adaptive section of the reading test separately from items that were administered in the adaptive sections (Stage 1 and Stage 2) of the reading test (Table I.A1.7). Each of these subsets shows a pattern of change in success rates, over the years, that is broadly consistent with the overall trend in mean performance. This implies that a shorter reading test would likely have led to similar results: results did not decline because students disengaged with the test after a while, but because students performed below their peers from three or seven years earlier from the very beginning. Nor did the adaptive nature of the test – whereby good students progressively encounter harder questions – influence the direction of trends. Indeed, the vast majority of declines are clearly visible already in the first, non-adaptive section of the test.

Student performance across different types of reading tasks

Declining average success rates imply that, on average, items became more difficult for the student population assessed in PISA. By tracking success rates on single items over recent cycles, it is possible to identify common characteristics of the items whose difficulty for students increased more than average (students' ability to solve the tasks successfully declined the most); and of those whose difficulty changed the least. In this section, these patterns are presented through odds ratios, and using the 2018 odds of successfully responding to an item as the baseline. An odds ratio above 1 indicates that the likelihood of success increased; conversely, an odds ratio below 1 indicates that the likelihood of success decreased.

In particular, items were grouped along the following text and task characteristics:

- *Position in the test*: Core (items from units that were administered in the initial, non-adaptive section of the test); Stage 1; Stage 2.
- *Position within the unit:* First item in the unit (in which new texts are introduced for reading); later items in the same unit, asking questions about the same source texts already introduced in the first item.
- *Text length*: Items based on shorter texts (fewer than 200 words in the English source version); on medium-length texts (between 200 and 399 words); or on longer texts (400 words or more).
- *Response format*: Open response (human- or computer-scored); simple multiple choice; complex selection (e.g. drag-and-drop).
- *Text source*: Single (the answer requires reading text from a single source); multiple (the answer requires reading text from multiple sources).
- *Cognitive process*: Locating information (scanning a single source to locate the answer to the question, or searching, across several sources, for the desired information); understanding (including both literal comprehension and connecting information to establish an overall meaning); evaluating and reflecting (involving higher-level processes where readers must go beyond the literal or inferred meaning of the text to assess the quality and validity of text content and form).

Some of these dimensions seem to be associated with meaningfully different trends over time. In other words, some aspects of the texts and tasks included in the PISA reading test are associated with even stronger-than-average declines in students' ability to successfully engage with them, on average across OECD countries, while others appeared less affected by the decline.

Clear differences in relative success rates between 2018 and 2022 emerge in particular by text length, response format and cognitive process; smaller differences are also observed by cognitive process (Table I.A1.8):

- Performance dropped more strongly on items from units that used longer texts as stimuli, on average across OECD countries.
- Performance also dropped more strongly on items that used a simple multiple-choice response format (typically, in PISA, with four response options, of which one is correct).
- Finally, not all processes appear to be equally affected by the decline in reading performance between 2018 and 2022. When considering the average changes observed across OECD countries, least-affected were items that demanded from students to locate information, which students could successfully solve even with only a superficial, yet targeted, engagement with the text. Conversely, the most-affected items relate to higher-level processes (evaluating and reflecting), which require careful reading, and often required students to remember and integrate multiple pieces of information, either from a single source or from multiple sources.

Over the longer period between 2018 and 2025, differences by response format were even stronger, as students were somewhat more successful in 2025 on open-response items than three years earlier, but performance continued to decline on the remaining items (Table I.A1.10); and differences by text length continued to be visible, even though they did not widen. In contrast, differences by the targeted cognitive process narrowed somewhat: between 2018 and 2025, performance declined similarly, irrespective of the targeted process (Table I.A1.9).

Finally, the small differences observed between 2018 and 2022 by position of the unit within the test were compounded by similarly small differences in the next period, to produce a more significant pattern when considering the longer period (2018-2025) (Table I.A1.9). On average across OECD countries, performance dropped throughout the test, but it dropped more severely in the final adaptive stages than on items that were presented to students at the beginning of the test. In other words, performance declined over the years and, in addition, performance declined during the test, in relative terms, to produce larger declines in the latter sections of the test compared to the declines observed in earlier sections.

Trends are more parallel on other dimensions; in particular, PISA data do not indicate, on average across countries, greater difficulties (or reluctance) of students to respond to items that require searching or integrating meaning and information across multiple texts (sources); compared to items that relied on a single source of text. Nor do they indicate large differences in success rates depending on the position of the item within the unit, as the first item, or as a further item based on the same text(s).

Results for individual countries and economies may sometimes differ from the average patterns across OECD countries presented above and are, in general, affected by wider margins of uncertainty than average results. They are available in the underlying tables (Tables I.A1.8, I.A1.9, I.A1.10).

What kind of mistakes became more common between 2018 and 2025?

If success rates on PISA reading tasks declined, incorrect (or partially correct) responses must have increased. But what kind of mistakes became more common?

In this section, the analysis focuses on two types of incorrect responses that can be identified on most, if not all, items: skipped responses (item responses left blank, in-between non-missing responses); and hasty responses (item responses that were not scored as correct, and on which students spent less time than the fastest, yet accurate respondents). More precisely, a "minimum threshold" of time effort required for each item was defined as the 1st percentile of the (unweighted) distribution of response times among all respondents who solved the item correctly, across all participating countries and economies.[2] This means that only 1% of all full-credit respondents were able to respond to the item in less time, and 99% of full-credit respondents spent longer than this threshold. The minimum threshold of time required was increased to 10 seconds in all cases where, mostly because of correct guess answers, more than 1% of full-credit respondents had provided the correct response in less than 10 seconds. Respondents who did *not* obtain a full-credit score on the item, but who spent less time than this threshold, are considered to have given a hasty, speeded response (as defined, a "skipped" response may also be a "hasty" response).

Table I.A1.12 shows how the proportion of skipped and speeded responses evolved between 2018 and 2025. A clear trend emerges: on average across OECD countries, the average proportion of hasty (incorrect and fast) responses increased significantly between 2018 and 2025. The average proportion of hasty responses increased by over 4 percentage points over the period, reaching a total of about 9%. The average increase across items of hasty responses exceeded 10 percentage points in three countries/economies (Kosovo, Dominican Republic and Bulgaria, in descending order of that increase). Similar analyses for the mathematics and science test are presented in Tables I.A1.13 and I.A1.11; analyses for math, in particular, also show an increase in the proportion of hasty responses between 2022 and 2025, with the largest increases observed in Serbia, Malta and Israel.

In the PISA test, sequences of items that are left blank at the end of the test are not considered when scoring students' answers. Similarly, in these analyses, the corresponding students and (missing) answers are excluded from the percentages of "skipped" or "hasty" respondents. Indeed, in PISA, these items are considered as if they were not administered to students, who, most likely, did not reach them. Such non-reached items are also ignored when estimating item difficulty and student performance. However, because, over time, students became more likely to skip or to provide a fast (if incorrect) response rather than to continue working on a task that they perceived as difficult, it is interesting to note that the proportion of non-reached items declined in reading, by about 2 percentage points (Table I.A1.12), on average across OECD countries.

Reading-fluency trends

Just like in 2018 and 2022, the PISA 2025 reading test started with a three-minute-long assessment of students' reading fluency. Students were asked to evaluate the sensibility of 21 or 22 sentences (i.e. two out of six possible sentence blocks). The same question was asked about each sentence: "Does the sentence make sense? Yes/No". Each set of sentences included both sensible sentences (e.g. "The student read the book last night") and nonsensical sentences (e.g. "Airplanes are made of dogs"). The instructions given to students, including a short practice test, can be found online (https://doi.org/10.1787/098bab1a-en).

Students who completed the test quicker – while still taking the time required to make sound, sensible judgements – are more fluent readers. When comparing results over time, longer response times (for a given level of accuracy) would suggest declining levels of reading fluency; while lower levels of accuracy in the sensibility judgements could indicate a lack of foundational skills in reading, but also a lack of attention and engagement.

A simple comparison of the percentage of correct responses across years immediately shows, in most countries and economies, a declining proportion of students who made accurate assessments of the proposed sentences. In most countries and economies, the proportion of students who correctly classified each sentence as either "sensible" or "not-sensible" declined, and the direction of trends in percent-correct scores on reading-fluency items mirrors the direction observed for success rates on the remaining, main section of the reading test (Table I.A1.7). Nevertheless, a few countries stand in contrast to this trend; in particular, in Georgia, Japan, Kazakhstan, Montenegro, Chinese Taipei and the United Arab Emirates, success rates on reading-fluency items declined between 2018 and 2025, but higher success rates were observed in the longer reading comprehension tasks (in all these countries/economies, the overall trend in reading performance is reported as not significantly different from 0; Table I.B1.2a.37).

A more nuanced understanding of this trend requires considering, for each of the six blocks of reading sentences that were presented to students, both the number of correct sensibility judgements and the time taken to form these judgements.[3] It is then possible to classify students who took the PISA fluency test into four categories:

- A first distinction is between those who engaged with the fluency test as expected and those who, instead, tried to rapidly guess the correct answers, before they could even read the full text. The latter, "hasty" test-takers, made more than one mistake in their sensibility judgements, and completed the assessment faster than 99% of those test-takers in their country and language group who made one mistake at most. Their performance is hard to interpret, as it might reflect a lack of foundational skills in reading, but also a lack of attention and engagement.[4]
- A second distinction is among the remaining, and more engaged test-takers. Among these, language-specific norms have been derived for response time on reading-fluency tasks to distinguish between "fluent" readers, "slow" readers and "inaccurate" readers. The norms correspond to the pace at which at least 50% of Level-3 (which corresponds to the average proficiency of 15-year-old students across OECD countries) students read, excluding those few Level-3 students who made more than one mistake in their sensibility judgements. Students who read at this level can take many features into account when comparing, contrasting or categorising information, even if the required information is not prominent or there may be a considerable amount of competing information:
    - "Accurate" readers made, at most, one mistake in their sensibility judgements and took, at most, twice as long as the norm defined for their language group.
    - "Slow" readers are those who took more than twice as long to complete the reading-fluency test as the norm defined for their country and language group (regardless of whether the answers were accurate or not).
    - "Inaccurate" test-takers made, just like "speeded" readers, more than one mistake, but completed the test neither too fast nor too slowly.

Table I.A1.15 shows that, between 2018 and 2025, the proportion of accurate (and fluent) readers declined by 7 percentage points across 35 OECD countries on average; meanwhile, the proportion of "slow" increased only by about 1 percentage point. Concurrently, the proportion of "hasty" readers increased by about 5 percentage points and almost doubled between 2018 (6.6%) and 2025 (11.4%). Most of this increase was over the most recent period (2022-2025).

However, not all countries and economies experienced similar trends. While the proportion of accurate, fluent readers declined in most countries and economies between 2018 and 2025, and this decline often coincided with an increase in the proportion of speeded test-takers, there are exceptions. In Morocco, the proportion of "slow" readers increased the most, possibly reflecting the expansion of secondary education in the country, to students who would have previously dropped out of school. In Kazakhstan, the proportion of "inaccurate" readers increased, but the proportion of "speeded" test-takers did not change significantly. And in a few countries – most notably, in the Philippines and Brunei Darussalam – the proportion of fluent readers increased between 2018 and 2025. In these two countries, the increase in the proportion of fluent readers is just one of several positive trends found in PISA.

Can differences in student motivation and test-context effects explain the observed reading trends over the 2018-2025 period?

Performance on the PISA tests reflects what students know and can do; but also how motivated they are to do well on the test, on the day of testing.

For most students, PISA is a low-stakes assessment: they can refuse to participate in the test with no negative consequences and do not receive any feedback on their performance. There is a risk, therefore, that students do not do their best on the test; and that they behave differently from what they would do in other circumstances.

How did students' motivation to do well on the test change over time? This section summarises several indicators of student engagement using PISA 2025 data, and compares them, where appropriate, to PISA 2018 and 2022 data.

A number of approaches have been developed to assess differences in students' motivation in low-stakes tests (Buchholz, Cignetti and Piacentini, 2022[2]) between individuals or groups (e.g. across countries and economies). Some approaches rely on test-takers' own perceptions and reports about their effort and dispositions; others rely on the observation of student behaviour during the test. Among the latter, one can further distinguish between invasive approaches, which require dedicated resources such as human proctors, eye-tracking devices or the administration of bespoke test modules, and non-invasive approaches, which rely only on students' interactions with the test and questionnaire forms. This section uses self-reports and non-invasive behavioural indicators.

Self-reported effort invested in the PISA test and student motivation for learning

In most countries/economies, students reported making less effort on the test in 2025 than in 2022 and in 2018: on average across 35 OECD countries, the difference corresponds to -0.5 points on the 10-point scale (compared to 2018; and -0.3 points compared to 2022) (Table I.A1.1). Meanwhile, the proportion of students who indicated that they invested very little effort in the PISA test increased from 3.5% to 5.4%. Reports about the effort students would have made had the test counted towards their grades were also lower (by 0.2 points on average across 35 OECD countries) but the decline was more marked for reports about the actual effort students made.

There is a moderate positive association between country/economy-level changes in effort reported by students and reading trends; but also between the effort students reported they would have made on a regular school test and reading trends. This seems to imply that changes in student dispositions towards PISA could reflect wider changes in student dispositions towards assessments of learning, and perhaps towards learning more generally. Moreover, much of these associations appear driven by Georgia and the Philippines, among the few countries where self-report effort improved between 2018 and 2025 (as did reading performance, in the Philippines; in Georgia, the observed change was positive, but not significant). In contrast, among countries and economies where average self-report effort declined by more than 0.5 points on the 10-point scale, the direction and magnitude of performance trends vary significantly, from no decline at all (e.g. in Italy and Chinese Taipei) to very large drops (e.g. in Iceland and Norway*).

Still, the above analyses of reading trends have shown that the declining scores also, and perhaps primarily, reflect a decline in focus and attention; in particular, the kind of focus and attention that is a constituent part of the reading construct in PISA. Interestingly, the questionnaire answers of the students who took the PISA test often indicate a negative shift in general dispositions towards schooling and towards effortful learning, which may have played a role in the trends observed. In particular, between 2022 and 2025, changes in the proportion of students who agreed, or strongly agreed, with the statement "I am curious about many different things" declined, and more so, on average, in countries and economies where reading results declined the most. Meanwhile, changes in the share of students who disagreed, or strongly disagreed, with the statement "School has been a waste of time" also correlate with the direction and strength of reading trends: even though only few countries and economies saw an increase in this share, relatively large increases were recorded in countries, such as Germany, Latvia and the Netherlands*, where mean reading scores were, in 2025, much below the corresponding scores in 2022 (see Chapter 3; Tables I.B1.3.2 and I.B1.3.71).

Such correlations do not constitute proof of causality, nor are they a reliable guide for assigning priorities among competing hypotheses; still, they can suggest a wider context for the performance trends, one that is equally in need of interpretation and explanation.

PISA data can document shifts in attitudes towards schooling and learning among 15-year-olds, but cannot show the extent to which these shifts reflect differences across successive cohorts or, rather, broader time trends that affect all cohorts (including, for example, the current 15-year-olds' parents) to a similar extent.

Successive PISA datasets provide a series of snapshots of student learning at age 15; but children's performance on tests is influenced by the cumulative effect of the school and family environment over all previous years. For example, many countries have witnessed, after the first COVID pandemic (i.e. starting around 2020), persistently high levels of student absences at all levels of education (OECD, 2026[3]). International data on fourth-grade students, i.e. at an age where student absences are more likely to reflect parental attitudes than student attitudes, indicate that the proportion of students who are absent from school at least once every other week rose from 10.7% in 2019 to 14.8% in 2023, on average across OECD countries (OECD, 2026, pp. 29-30, based on TIMMS data[3]). Even if student absences were, by 2025, slowly returning to lower levels from a peak level during the pandemic years, from the point of view of the students who were assessed in 2025 the lower levels of school attendance experienced over five years likely had a bigger impact than the level of absenteeism at age 15, which, as shown also by PISA data, tends to be lower than in 2022 (Table I.B1.4.161).

Behavioural measures of test engagement and fatigue

Some behavioural measures of test engagement, which allow for trend comparisons and can therefore help contextualise the observed reading trends, can be derived from other domains assessed in PISA, and even from the questionnaire.

Given the earlier findings that indicated somewhat stronger declines in the latter part of the reading test, compared to the initial section, one may wonder whether this reflects more generally a drop in the capacity to sustain effort; and whether a two-hour computer-based test may not exceed the endurance of 15-year-olds. To what extent are the negative trends in reading reflective of shorter concentration spans?

Differences in performance by hour of testing and domain order

A first angle to investigate student fatigue consists in comparing the performance of students who sat the reading test in the first hour and in the second hour of testing. A similar comparison can be conducted for all subjects; and if the differences in performance are indicative of the students' capacity to sustain a cognitive effort, in general, results should be relatively consistent regardless of the subject. Indeed, by virtue of the random allocation of test booklets to students, the groups of students that are being compared in each case are strictly equivalent.

Tables I.A1.3, I.A1.4 and I.A1.5 present these comparisons for science, mathematics and reading. Performance differences between the first and second hour are often negative, and sometimes relatively large (more than 10 score points in reading, on average across 35 OECD countries, regardless of the year). However, the between-country variation in these differences is not strongly correlated across subjects, and the differences themselves do not seem to have widened over time: more often than not, the negative trend in reading between 2018 and 2025 was even stronger for students who took reading as the first subject (Table I.A1.4). Only a few countries/economies stand out for showing a more negative reading trend for students who took the reading test in the second hour (Belgium, Kosovo and Lithuania) than for students who took the reading test in the first hour.

An alternative interpretation of these differences emphasises the role of interactions across subjects. In this interpretation, performance is not only influenced by a domain's position in the test, but by the precise nature of what students did in the hour before. For example, doing a test that is perceived as difficult, by most students, in the first hour (e.g. mathematics) may have a negative effect on students' reading performance in the second hour; while doing an easier test in the first hour may have a positive effect. On average across OECD countries domain-order effects are not pronounced (Table I.A1.6); but this average does not necessarily reflect the absence of domain-order effect: it may result from the large variety of forms that domain-order effects take across countries and economies. For example, in Chinese Taipei, students who took the reading test after a mathematics test achieved higher scores than students who took it after the assessment of "learning in a digital world"; while a difference in the opposite direction is observed for students in Finland.

Differences in performance between the beginning and the end of the science test

A second angle to investigate the role of fatigue, and how it may have impacted performance trends (and reading trends in particular), exploits the science test, and in particular its linear version, which was used for 25% of test-takers. The item bank in science was divided in three item sets (A, B and C), from which sequences of about 11 to 13 items were extracted (these sequences are referred to as "testlets"). Each linear test consisted of three such testlets, and the order in which these testlets were administered was rotated across students, such that, out of these 25% of student, one third started with item set A, one third with item set B, and one third with item set C; and similarly, for the second and third testlets. The change in the percentage of correct responses over the three possible positions of an item set in the linear test therefore provides an indirect measure of test fatigue.

Table I.A1.2 shows that in most countries, results declined modestly over the course of the science test; only Korea and Kenya exhibit the opposite pattern of better results on the same items when they are located at the end of the test, compared to the beginning. The largest declines, with differences in P+ exceeding 4 percentage points, were observed in Bulgaria, Israel and Thailand (in descending order of the magnitude of the decline).

Overall, student fatigue during the PISA test, in general, does not appear to play a significant role in the observed trends; countries where fatigue effects are more pronounced in 2025 did show similar declines, compared to 3 or 7 years earlier, as countries in which fatigue effects are less pronounced.

Patterned response behaviour (straightlining)

A third indicator of fatigue, or perhaps more generally of disengagement in the PISA test, is based on mixed scales in the student questionnaires. Mixed scales are item batteries that measure a single construct using both positively worded and negatively worded items. An example – and the only mixed scale that can be compared over three cycles of PISA, from PISA 2018 to PISA 2025 – is the sense-of-belonging scale, which contains apparently contradictory statements such as "I feel lonely at school" and "I make friends easily at school". In both cases, students are asked to indicate the extent to which they agree with the sentence provided.

Students who do not pay attention to the sentence, or to the response scale, may sometimes respond with the same response option (e.g. "strongly agree") regardless of the item; thus contradicting themselves half of the time (the sense-of-belonging scale contains exactly three positively worded items and three negatively worded items). Students are said to "straightline" because their responses to these items are all perfectly aligned, on the response sheet – and most likely misaligned with how they truly feel. Straightlining is not the only possible pattern of disengagement, but is perhaps the easiest to detect.

On average across 23 OECD countries, the percentage of students who "straightlined" in the sense-of-belonging item battery was somewhat lower in 2025 than in both 2022 and 2018. This suggests that students were not less engaged with the PISA test and questionnaire than in previous years. In fact, there are only limited exceptions where straightlining increased significantly, and only when considering the most extreme version of it (when students always select the "strongly agree" or "strongly disagree" option), which remains very rare. The largest increase, from 0.9% to 2.2% (+1.3 percentage points), was observed in Latvia.

Conclusion

Declining trends of reading performance are a robust, if sobering, finding from the PISA 2025 data. They are unlikely to be a measurement artefact, an aberrant observation that emerged only in the specific context of the PISA assessment; the signal is strong, stronger than any caveat that may result from the limitations of current educational measurement tools.

At the same time, a closer look at the trend assigns a leading role, for the declining success rates, to the declining capacity of students to engage with reading tasks which require careful reading and sustained attention. Over time, students became more and more likely to provide a hasty, superficial and incorrect response, and less likely to spend the time and effort required by a correct response. If test engagement appears, therefore, to play a role in the observed declines, it is because the capacity to direct and, often, sustain attention for a relatively long period is part of what the "reading" test in PISA assesses.

Comparisons of PISA 2022 and 2018 response patterns, moreover, suggest that students struggled more in 2022, in a majority of countries/economies and compared to some four years earlier, when asked to respond to questions about longer texts, or when asked to hold in their memory multiple pieces of information and to combine them, e.g. in order to assess the quality or trustworthiness of a written text; whereas performance held more steady when they were asked to find a single piece of information in the text. Over the longer period (2018 to 2025), differences by cognitive process were less pronounced, and declines were more uniform across all types of tasks; in contrast, difficulties related to text length remained a strong driver of the overall decline.

Earlier analyses of PISA data provide interesting pointers to how schools, teachers and parents can help create opportunities for students to acquire strong reading skills. In particular, the *21st-Century Readers* (OECD, 2021[4]) report pointed to the importance, for teachers, of explicitly teaching navigation strategies and, for students and their parents, to the continued relevance of print reading as a way of building up the "muscles" and agility required in the largely disintermediated and flooded information landscape of the early 21st Century. There is no doubt that PISA will revisit these questions, and support similar analyses, as it engages in a revision of the framework for assessing reading and as reading returns as a focal domain in PISA 2029.

Whether the declining results in reading reflect a less central role of reading skills in an age where large language models can instantly summarise long documents, and where audio and video streams often replace written text, cannot be determined by PISA data. The debate about the consequences of falling reading scores transcends the power of PISA data, and must be informed by values and worldviews too. Nevertheless, the importance of reading in the PISA test, for the moment, reflects a consensus among the countries that are represented in its Governing Board and among the experts who contribute to the assessment frameworks[5]: even if reading *practice* is declining at work, in civic contexts or for leisure, and may continue to decline in the future, reading *competence* remains a required foundation for developing a wide range of human capacities that contribute to individual and societal success – from reasoning, to empathy, to critical thinking – and therefore remains a central goal for education.

Table I.A1.1. Trends in reading scores over three PISA cycles (2018-2025) – Tables for Annex A1

Table I.A1.1	Effort invested in the PISA test, 2018 through 2025
Table I.A1.2	Endurance in the PISA 2025 science test
Table I.A1.3	Performance differences by testing hour in science, 2018 through 2025
Table I.A1.4	Performance differences by testing hour in reading, 2018 through 2025
Table I.A1.5	Performance differences by testing hour in mathematics, 2018 through 2025
Table I.A1.6	Performance differences in the second hour, as a function of the test taken in the first hour
Table I.A1.7	Average percentage of correct responses to trend items in reading, 2018 through 2025
Table I.A1.8	Change in the likelihood of correct responses in 2022, compared to 2018, by item characteristics
Table I.A1.9	Change in the likelihood of correct responses in 2025, compared to 2018, by item characteristics
Table I.A1.10	Change in the likelihood of correct responses in 2025, compared to 2022, by item characteristics

Table I.A1.11	Types of missing and incorrect responses to science items (PISA 2025)
Table I.A1.12	Types of missing and incorrect responses to trend items in reading, 2018 through 2025
Table I.A1.13	Types of missing and incorrect responses to trend items in mathematics, 2022 through 2025
Table I.A1.14	Response patterns and time in the PISA reading-fluency test, 2018 through 2025
Table I.A1.15	Reading fluency, 2018 through 2025
Table I.A1.16	Reading fluency, by proficiency levels in reading
Table I.A1.17	Straight-lining on sense-of-belonging questions, 2018 through 2025

StatLink https://stat.link/78340u

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OECD (2021), *21st-Century Readers: Developing Literacy Skills in a Digital World*, PISA, OECD Publishing, Paris, https://doi.org/10.1787/a83d84cb-en. [4]

OECD (2019), *PISA 2018 Assessment and Analytical Framework*, PISA, OECD Publishing, Paris, https://doi.org/10.1787/b25efab8-en. [6]

Notes

[1] PIRLS defines reading literacy as "the ability to understand and use those written language forms required by society and/or valued by the individual" (Mullis and Martin, 2019[5]). PISA similarly defines reading literacy as "understanding, using, evaluating, reflecting on and engaging with texts in order to achieve one's goals, to develop one's knowledge and potential and to participate in society" (OECD, 2019[6]). While conceptually related, the actual assessments are tailored to the specific target age group (Grade 4 for PIRLS, 15-year-olds for PISA). For example, reading passages used in PIRLS are "typical of those read by [Grade 4] students in their everyday experiences"; PISA, in contrast, also includes some tasks based on work-related texts, because its respondents are older and

because it aims to assess their ability to meet real-life challenges that they will encounter after leaving compulsory schooling.

[2] Due to minor differences in screen layout, and to a change in the test-taking platform in 2025, which might have affected the measurement of time on task, the “minimum time threshold” is defined separately for each year.

[3] Due to minor differences in screen layout and to a change in the test-taking platform in 2025, which might have affected the measurement of time on task, timing data are converted into categories of “fast”, “regular” and “slow”, based on theresholds defined separately by country and year.

[4] The operational definition of “hasty test-takers” in reading fluency is similar to how hasty responses are defined on the main reading tasks. However, to account for the greater influence of linguistic aspects (script and orthography, text length, etc.) on the time effort required for reading fluency tasks, the thresholds are set separately by country and (major) language. This is possible also thanks to the larger number of accurate responses on which such thresholds can be computed for reading-fluency tasks, which count among the easiest in the reading test.

[5] At the time of writing, the most recent draft version of the PISA 2029 Reading Framework is available online at EDU/PISA/GB(2026)6 (accessed on 12 June 2026).

Annex A2. The PISA target population and the PISA samples

What is the PISA target population?

PISA assesses the cumulative outcomes of education and learning at a point at which most young people are still enrolled in formal education: when they are 15 years old. PISA uses an age-based definition of its target population, one that is not tied to the institutional structures of national education systems.[1]

The target population of PISA is defined as all students who are aged between 15 years and 3 (complete) months and 16 years and 2 (complete) months at the beginning of the assessment period,[2] plus or minus an allowed 1-month variation, and who are enrolled in an educational institution at Grade 7 or higher. All students who met these criteria were eligible to sit the PISA assessment in 2025, regardless of the type of educational institution in which they were enrolled and whether they were enrolled in full- or part-time education. Table I.A2.1 presents the proportion of 15-year-old students enrolled in Grade 7 or higher, from PISA 2003 to 2025.

Hence, PISA measures knowledge, skills and attitudes of a group of individuals who were born within a comparable reference period, but who may have been exposed to different educational experiences inside and outside of school. These students may be distributed over different ranges of grade levels (both in terms of the specific grade levels and the spread in grade levels) in different countries/economies, or over different tracks or streams within their respective education systems. For example, Table I.A2.2 shows the percentage of students at each grade level, by country and economy. Table I.A2.3 presents the International Standard Classification of Education (ISCED) level in which students aged 15 are most frequently enrolled, by country and economy. It is important to consider these differences when comparing PISA results across countries and economies. In addition, differences in performance observed at age 15 are not static and may change over the life course.

How were students chosen?

In all PISA 2025 participating countries/economies, a two-stage stratified sample design was implemented. The first-stage sampling units consisted of individual schools having 15-year-old students, or with the possibility of having such students, at the time of assessment. Schools were sampled from a comprehensive national list of all PISA-eligible schools, known as the school sampling frame. The schools in the sampling frame were assigned to mutually exclusive groups (strata) based on school characteristics. Within strata, schools were sampled systematically with probabilities that were proportional to a measure of size. The measure of size was a function of the estimated number of PISA-eligible 15-year-old students enrolled in the school. This type of sampling is referred to as systematic with probability-proportional-to-size (PPS) sampling.

The second-stage sampling units were students within sampled schools. Once schools were selected to be in the sample, a complete list of each sampled school's 15-year-old students was prepared. Countries/economies participating in the computer-based assessment (CBA) had to set a target cluster size (TCS) of 42 students, while countries/economies participating in the paper-based assessment (PBA) had to set a TCS of 35 students. Variations to the TCS were allowed, in consultation with the sampling contractors, for reasons such as expected student non-response or operational considerations, among others. From each list of eligible students within a school that contained more than the target cluster size, a sample of students were selected with equal probability; and for lists with fewer than the target number, all students on the list were selected. The students selected for the Foreign Language Assessment (FLA), which was optional, were an additional sample of students above and beyond those needed for the core PISA assessments.

Population coverage, and school and student participation rate standards

To provide valid estimates of student achievement, the sample of students had to be selected using established and professionally recognised principles of scientific probabilistic sampling in a way that ensured representation of the full target population of 15-year-old students in the participating countries and economies.

Furthermore, quality standards had to be maintained with respect to: i) coverage of the PISA international target population, ii) accuracy and precision, and iii) school and student response rates.

Chapter 14 of the *PISA 2025 Technical Report* (OECD, forthcoming[1]) provides sampling outcomes of the individual PISA-participating countries and economies. PISA data and methodology can be found online in the PISA database. https://www.oecd.org/en/about/programmes/pisa/pisa-data.html

Coverage of the PISA international target population

It is often unavoidable to reduce coverage of the target population by excluding, for instance, a small, remote geographical region due to inaccessibility, language differences, political, organisational or operational reasons, or presence of special education needs students. Areas deemed to be part of a country/economy that included students in the PISA target population, but which were not included for sampling, are designated as non-covered areas. To ensure international comparability, efforts were made to ensure that exclusions, if necessary, were minimised according to the *PISA 2025 Technical Standards* (https://www.oecd.org/content/dam/oecd/en/about/programmes/edu/pisa/publications/technical-standards/PISA_2025_Technical_Standards.pdf).

Exclusion could also take place either at the school level (exclusion of entire schools) or at the within-school level (exclusion of individual students).[3] These exclusions were often for special education needs or language differences. While the types of within-school exclusion are defined consistently across all participating countries and economies, a nationally-defined within-school exclusion category was permitted if agreed upon by the international contractor and the OECD.[4] As in previous PISA assessments, the *Une Heure* (UH) form, which consists of a subset of the PISA assessment items deemed more suitable for students with special needs, was available for PISA 2025. Eighteen countries/economies used the UH booklet in PISA 2025.

A school attended only by students who would be excluded from taking the assessment for intellectual, functional or linguistic reasons was considered a school-level exclusion.

The overall exclusion rate within a country/economy (i.e. school-level and within-school exclusions combined) needed to be kept below 5% of the PISA desired target population. Not all countries and economies met this standard. See Chapter 14 of the *PISA 2025 Technical Report* (OECD, forthcoming[1]) for details on sampling outcomes of the individual PISA-participating countries and economies.

Accuracy and precision of the PISA samples

At minimum, 150 schools were selected in each country/economy, but if a participating country/economy had fewer than 150 schools for 15-year-old students in existence, the general practice was to select all schools for participation. Within each participating school, a predetermined number of students – the target cluster size (TCS), as defined earlier – was randomly selected with equal probability. In schools with fewer students than the target cluster size, all students were selected. In total, a minimum sample size of 6 300 assessed students was needed in computer-based countries/economies, or 5 250 assessed students in paper-based countries/economies. In countries/economies where the entire population had fewer students, all students were selected. It was possible to negotiate a target cluster size that differed from 42 students (or 35 for PBA countries). If the target cluster size was lower than 42 (or 35), the sample size of schools was increased to more than 150 to ensure that at least the minimum sample size of assessed students would be reached. The target cluster size selected per school had to be at least 25 students to ensure adequate accuracy in estimating variance components within and between schools.

Countries and economies participating in the FLA option needed an additional 1 650 assessed students for FLA.[5] To accomplish this, the target cluster size was usually increased by approximately 26% for countries/economies participating in the FLA. For example, a country/economy that would have sampled 42 students in each school generally increased its TCS to 53 to accommodate the FLA sample. In some instances, the country/economy opted to increase the school sample size to achieve the required number of students selected for FLA.

Participating countries/economies were strongly encouraged to identify available variables to use for defining the explicit and implicit strata for schools to reduce the sampling variance. See further details in Chapter 7 of the *PISA 2025 Technical Report* (OECD, forthcoming[1]).

School response rates

At least 85% of the schools initially selected to take part in the PISA assessment were required to agree to conduct the test when accounting for the number of enrolled 15-year-olds (see details in the *PISA 2025 Technical Standards*, https://www.oecd.org/content/dam/oecd/en/about/programmes/edu/pisa/publications/technical-standards/PISA_2025_Technical_Standards.pdf). Where the initial response rate of schools was between 65% and 85%, however, an acceptable school response rate could still be achieved using replacement schools.

Whenever a school is selected for PISA, two other schools – the most similar according to the statistical criteria used for sampling – are selected as replacement schools in case of non-response or other contingencies. However, statistical similarities notwithstanding, sampling bias is still possible if the replacement schools differ from sampled schools in ways that might not be considered for sampling. Therefore, countries/economies were encouraged to persuade as many of the schools in the original sample as possible to participate.

Furthermore, a school with a student participation rate less than or equal to 33% was not considered a participating school, and data from such schools were not considered for analysis.

Student response rates

An overall response rate of 80% of selected students in participating schools was required. A student who had participated in the original or follow-up cognitive sessions was considered a participant if they responded to a minimum of five cognitive items or if they responded to at least one cognitive item and had completed selected questions from the background questionnaire. The overall student response rate was computed using only students from schools with a student response rate greater than 33%.[6]

Not all countries and economies met these school and student response rates standards. See Chapter 14 of the *PISA 2025 Technical Report* (OECD, forthcoming[1]) for details on sampling outcomes of the individual PISA-participating countries and economies.

Table I.A2.1. The PISA target population and the PISA samples – Tables for Annex A2

Table I.A2.1	Change in the enrolment of 15-year-olds in Grade 7 and above (PISA 2003 through PISA 2025)
Table I.A2.2	Modal ISCED level for 15-year-old students in the PISA 2025 sample
Table I.A2.3	Percentage of students at each grade level inthe PISA 2025 sample

StatLink https://stat.link/pe3lsg

References

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Notes

[1] International education surveys must ensure comparable target populations across countries and economies. While assessing students at the same grade level can help, differences in education systems – such as entry age, early childhood provision and structure – make grades difficult to compare internationally.

[2] The international requirement for PISA 2025 was that the assessment had to be conducted during a 70-day period, referred to as the testing period, between 1 March 2025 and 30 September 2025, unless otherwise agreed. Furthermore, testing was not permitted during the first six weeks of the school year due to a concern that student performance levels may be lower at the beginning of the academic year than at the end of the previous academic year, even after controlling for age.

[3] International within-school exclusion of students was allowed for the following groups:

- Intellectually disabled students: These are students who have a documented mental or emotional disability and who, in the professional opinion of qualified staff, are cognitively delayed such that they cannot be validly assessed in the PISA testing setting. This category includes students who are emotionally or mentally unable to follow even the general instructions of the test. Students could not be excluded solely because of poor academic performance or disciplinary problems.
- Functionally disabled students: These are students who are permanently physically disabled in such a way that they cannot be validly assessed in the PISA testing setting. However, functionally disabled students who could provide responses were included in the testing.
- Students with insufficient experience in the language of assessment: These are students who need to meet all of the following criteria: i) they are not native speakers of the assessment language(s), ii) they have limited proficiency in the assessment language(s), and iii) they have received less than one year of instruction in the assessment language(s).
- Students taught in a language of instruction for the main assessment domain for which no materials were available. PISA Technical Standard 1.12 notes that the PISA test is administered to a student in a language of instruction provided by the sampled school in the major domain of the test. Thus, if no test materials were available in the language in which the sampled student is taught, the student was excluded. For example, if a country/economy has testing materials in languages X, Y and Z, but a sampled student is taught in language A, then the student can be excluded since there are no testing materials available in the student's language of instruction.

[4] A specific subgroup of students (e.g. students with severe dyslexia, dysgraphia or dyscalculia) could be identified for whom exclusion was necessary but for whom the first four within-school exclusion categories did not explicitly apply, so that a more specific within-school exclusion definition was needed.

[5] The desired target population for the FLA is a subpopulation of the PISA desired target population. Most countries/economies participating in the FLA confirmed that all, or nearly all, PISA-eligible students were also eligible

for the FLA. For a few countries/economies, this was confirmed after the Field Trial. There were a small number of countries/economies for which a significant number of PISA-eligible students were not eligible for the FLA. For example, two countries/economies had a large proportion of students whose main language of instruction was English. For these few countries/economies, the target cluster size and school sample size were adjusted, as necessary, in order to achieve an expected yield of at least 1 650 FLA-assessed students.

[6] Weighted student response rates were used for assessing this standard. Each student was weighted by the reciprocal of their sample selection probability.

Annex A3. Technical notes on analyses in this volume

Standard errors, confidence intervals, significance test and p-values

The statistics in this report represent estimates based on samples of students, rather than values that could be calculated if every student in every country had answered every question. Consequently, it is important to measure the degree of uncertainty of the estimates. In PISA, each estimate has an associated degree of uncertainty, which is expressed through a standard error. The use of confidence intervals provides a way to make inferences about the population parameters (e.g. means and proportions) in a manner that reflects the uncertainty associated with the sample estimates. If numerous different samples were drawn from the same population, according to the same procedures as the original sample, then in 95 out of 100 samples the calculated confidence interval would encompass the true population parameter. For many parameters, sample estimators follow a normal distribution and the 95% confidence interval can be constructed as the estimated parameter, plus or minus 1.96 times the associated standard error.

In many cases, readers are primarily interested in whether a given value in a particular country is different from a second value in the same or another country, e.g. whether girls in a country perform better than boys in the same country. In the tables and figures used in this report, differences are labelled as statistically significant when a difference of that size or larger, in either direction, would be observed less than 5% of the time in samples, if there were actually no difference in corresponding population values. Throughout the report, significance tests were undertaken to assess the statistical significance of the comparisons made.

Some analyses in this volume explicitly report p-values (e.g. Table I.B1.2a.36). P-values represent the probability, under a specified model, that a statistical summary of the data would be equal to or more extreme than its observed value (Wasserstein and Lazar, 2016[1]). For example, in Table I.B1.2a.36, the p-value represents the likelihood of observing, in PISA samples, a trend equal to or more extreme (in either direction) than what is reported, when in fact the true trend for the country is flat (equal to 0).

Statistical significance of differences between subgroup means, after accounting for other variables

For many tables, subgroup comparisons were performed both on the observed difference ("before accounting for other variables") and after accounting for other variables, such as the PISA index of economic, social and cultural status of students. The adjusted differences were estimated using linear regression and tested for significance at the 95% confidence level. Significant differences are marked in bold.

Statistical significance of differences over time in science, reading and mathematics performance

Standard errors and p-values for estimates that involve PISA scores from more than one cycle also account for the uncertainty around the reporting of PISA 2025 results on scales that were established in previous cycles (the "link error"). The methods used to quantify this uncertainty are described in the *PISA 2025 Technical Report* (OECD, forthcoming[2]) (Chapter 15). The methods used to account for this uncertainty in estimates that involve PISA scores from more than one cycle, including in comparisons of the percentage of low performers and top performers over time (e.g. Table I.B1.2a.33) and in regression-based trends (such as the "average decennial trend" reported in Table I.B1.2a.36), are described in *Annex A7* of *PISA 2022 Results (Volume I): The State of Learning and Equity in*

Education (OECD, 2023[3]). The link errors used in regression-based trends included in this Volume are available online in Table I.A3.1.

Range of ranks (confidence interval for rankings of countries)

An estimate of the rank of a country mean, across all country means, can be derived from the estimates of the country means from student samples. However, because mean estimates have some degree of uncertainty, this uncertainty should also be reflected in the estimate of the rank. While mean estimates from samples follow a normal distribution, this is not the case of the rank estimates derived from these. Therefore, in order to construct a confidence interval for ranks, simulation methods were used.

Data are simulated assuming that alternative mean estimates for each relevant country follow a normal distribution around the estimated mean, with a standard deviation equal to the standard error of the mean. Some 1 000 simulations are carried out and, based on the alternative mean estimates in each of these simulations, 1 000 possible estimates for each country are produced.

There are two steps to estimating the confidence sets of ranks. For each country, all possible differences in score estimates are considered between the reference country and all other participating countries. Then for every country, confidence sets of ranks are computed with respect to all other participating countries (with respect to all other OECD countries in the case of the OECD country ranking). Using these individual confidence sets, a marginal confidence set for each country and economy is computed with a confidence level of 95%.

The ranking that results from these marginal confidence sets is obtained using a stepwise multiple testing procedure. This implies that first, some countries will be ranked higher or lower compared to the reference country as described above. In the following steps, the rank of the remaining countries accounts for the countries that were ranked higher or lower in previous steps, until all countries are ranked with respect to the reference country. These are the ranks reported in Tables I.2.o3, I.2.o4, I.2.o5 and I.2.o6, see Chapter 2. For further details on this procedure, see (Mogstad et al., 2023[4]).

The main difference between the range of ranks (e.g. Table I.2.o3) and the comparison of countries' mean performance (e.g. Table I.2.1) is that the former takes into account the multiple comparisons involved in ranking countries/economies, while the latter does not. Therefore, sometimes there is a slight difference between the range of ranks and counting the number of countries above a given country, based on pairwise comparisons of the selected countries' performance. For instance, OECD countries Australia and New Zealand* have similar mean performance and the same set of countries whose mean score is not statistically different from theirs, based on Table I.2.1; but the range of ranks among all participating countries and economies can be restricted to 95% confidence between 8th and 14th for Australia while the range of ranks for New Zealand* is larger (between 8th and 15th) (Table I.2.o3). When interest lies in examining countries' rankings, this range of ranks should be used.

Statistics based on multilevel models

Statistics based on multilevel models include variance components (between- and within-school variance) and the index of inclusion derived from these components (index of inclusion refers here to the index of academic inclusion (see Tables I.B1.2a.25 to I.B1.2a.32) and to the index of social inclusion (see Tables I.B1.2b.17 and I.B1.2b.18)). Multilevel models are generally specified as two-level regression models (student and school levels), with normally distributed residuals, and estimated with maximum likelihood estimation. Where the dependent variable is mathematics performance, the estimation uses ten plausible values for each student's performance on the mathematics scale. Models were estimated using the Stata (Version 19) "mixed" module.

The index of inclusion is defined and estimated as:

$$100 * \frac{\sigma_W^2}{\sigma_W^2 + \sigma_B^2}$$

Equation I.A3.1

where σ_W^2 and σ_B^2, respectively, represent the within- and between-variance estimates.

For statistics based on multilevel models (such as the estimates of variance components), the standard errors are not estimated with the usual replication method, which accounts for stratification and sampling rates from finite populations. Instead, standard errors are "model-based": their computation assumes that schools, and students within schools, are sampled at random (with sampling probabilities reflected in school and student weights) from a theoretical, infinite population of schools and students, which complies with the model's parametric assumptions. The standard error for the estimated index of inclusion is calculated by deriving an approximate distribution for it from the (model-based) standard errors for the variance components, using the delta method.

Odds ratios

The odds ratio is a measure of the relative likelihood of a particular outcome across two groups. The odds ratio for observing the outcome when an antecedent is present is simply:

$$\mathrm{OR} = {(p_{11}/p_{12})}\Big/{(p_{21}/p_{22})}$$

Equation I.A3.2

where p_{11}/p_{12}represents the "odds" of observing the outcome when the antecedent is present, and p_{21}/p_{22} represents the "odds" of observing the outcome when the antecedent is not present.

Logistic regression can be used to estimate the log ratio: the exponentiated logit coefficient for a binary variable is equivalent to the odds ratio. A "generalised" odds ratio, after accounting for other differences across groups, can be estimated by introducing control variables in the logistic regression.

Figures in bold in the data tables presented in Annex B1 of this report indicate that the odds ratio is statistically significantly different from 1 at the 95% confidence level. To construct a 95% confidence interval for the odds ratio, the estimator is assumed to follow a log-normal distribution, rather than a normal distribution.

Percent-correct scores

Annex A1 reports analyses based on percent-correct scores, rather than scale scores.

At the item level, percent-correct scores are defined as the share of students who received credit for their response to the item, out of all students who were administered the item (excluding students who did not reach the item or whose response was coded as missing due to a technical issue). Partial-credit scores count as a proportion of full-credit scores (e.g. as 0.5 if there is a single partial-credit score).

For non-adaptive tests and for items administered only in non-adaptive sections of the test (e.g. reading-fluency items), final student weights are used to compute population-level percent-correct scores. For science and mathematics, only students assigned to linear tests are included in the computation of percent-correct scores.

For items administered in adaptive sections of the reading test, weights used in the computation of percent-correct scores are adjusted to account for the probability with which items were assigned to students (as a function of their performance on earlier sections of the test). All students had a non-zero probability of being assigned to an item that was included in their adaptive panel (the equivalent of a booklet in adaptive tests), but items included in more difficult testlets ("high" difficulty) were given to students with probabilities of 0.1, 0.5 or 0.9, for students with low, medium, or high performance on earlier tests; and similarly (but with probabilities 0.9, 0.5 and 0.1) for items included in easier testlets ("low" difficulty). The weight adjustment corresponds to the inverse of these routing probabilities.

Average percent-correct scores for groups of items sharing common characteristics are computed, in reading, as arithmetic averages across item-level percent-correct scores, with all items equally weighted. In science and mathematics, average percent-correct scores are computed first at the student level, and the mean of student-level average percent-correct scores is reported. The difference reflects the fact that in reading, item exposure rates differ across items and stages.

Change in the likelihood of correct responses in reading over time

For analyses in Tables I.A1.8, I.A1.9 and I.A1.10, item-level percent-correct scores (computed as above) are transformed into log-odds ($\ln\left(\frac{P}{1-P}\right)$). These log-odds are organised in a dataset with one observation per country, year, item, and weight (final and replicate), and analysed through a series of linear regressions that include indicator variables for years and item characteristics. This corresponds to an aggregate version of individual-level logit regressions. The coefficients, which correspond to mean differences between log-odds, are converted to the odds ratios reported in Annex A1 tables by taking their exponentiated form.

System-level correlations

System-level correlations presented in this volume are Pearson correlations computed across countries/economies using the system-level average estimates of the indicators considered.

Partial correlations are computed by accounting for GDP per capita (measured one year prior to the PISA test; see Table I.B3.2.1). Specifically, each variable is separately regressed on GDP per capita, and the correlation is calculated between the residuals. This residualisation approach estimates the association between the two variables after removing the variation in each variable associated with GDP per capita. For analyses of changes between PISA cycles, partial correlations are computed analogously using changes in GDP per capita over the corresponding period.

Statistical significance is assessed using two-sided t-tests. For Pearson correlations, the test statistic is:

Equation I.A3.2

$$t = r\sqrt{\frac{N-2}{1-r^2}}$$

where r is the correlation coefficient and N is the number of countries/economies included in the analysis. For partial correlations controlling for one variable (GDP per capita), the test statistic is:

Equation I.A3.3

$$t_p = r_p\sqrt{\frac{N-3}{1-r_p^2}}$$

where r_p denotes the partial correlation coefficient. P-values are obtained from the corresponding *t* distributions with $N-2$ and $N-3$ degrees of freedom, respectively.

It is important to note that these significance tests treat country-level average estimates as such and do not account for the uncertainty associated with the underlying PISA estimates. A minimum of four countries/economies was required to compute a Pearson correlation, and a minimum of five countries/economies was required to compute a partial correlation.

To assess the sensitivity of the reported correlations to outliers and influential observations, two robustness analyses were systematically conducted.

- **Exclusion of multivariate outliers:** Correlations were estimated after excluding countries/economies identified as outliers based on their Mahalanobis distance in the bivariate distribution of the two variables under consideration. Countries/economies with a squared Mahalanobis distance above the 95th percentile of the chi-2 distribution with two degrees of freedom were excluded. For partial correlations, the same procedure was applied to the residuals obtained after accounting for GDP per capita. This approach assesses whether the reported associations are driven by a small number of influential countries/economies. However, observations identified as outliers may reflect substantively meaningful differences and results may depend on the threshold chosen for outlier identification.
- **Spearman rank correlations:** Correlations were estimated using Spearman rank correlations instead of Pearson correlations. Because Spearman correlations are based on ranked values rather than the original metric of the variables, they are less sensitive to extreme observations and do not require the relationship between variables to be strictly linear. This approach assesses whether the reported associations are robust to departures from linearity and to the influence of extreme values. However, Spearman correlations do not fully capture differences in magnitude between observations.

When either robustness analysis produced substantively different estimates or led to a different conclusion regarding statistical significance, an endnote was systematically included to indicate this result. It should be noted that neither of these robustness analyses should be regarded as providing a preferred estimate. Rather, they are intended as sensitivity checks to assess the robustness of the reported findings under alternative assumptions.

Intergenerational educational and occupational mobility

For analyses on educational mobility in Table I.B1.4.131, variables HISCED (highest educational level of parents/guardians) and EXPECEDU (highest expected educational level of students) are recoded into categories following the PIAAC methodology: primary (ISCED 2 and below), upper-secondary (ISCED 3-4) and tertiary education (ISCED 5 and above). The recoded variables were then used to classify if students have lower, the same, or higher educational expectations than their parents/guardians.

For analyses on occupational mobility in Table I.B1.4.131, variables OCOD3 (expected occupation of students), OCOP1 (parent 1 occupational code) and OCOP2 (parent 2 occupational code) are recoded to the corresponding one-digit ISCO occupational groups. The highest parental occupational status was determined using the highest one-digit ISCO code reported for either parent/guardian. Armed forces occupations were excluded from the analysis, based on a similar analysis in the OECD Skills Outlook 2025. The recoded variables were then used to classify if students have lower, the same, or higher occupational expectations than their parents/guardians.

Table I.A3.1. Link errors for the linear trend between previous assessments and PISA 2025

	Average decennial trend between the years…	Link error
Science	2015, 2018, 2022, 2025	3.034
	2015, 2018, 2025	3.552
	2015, 2022, 2025	2.905
	2017, 2022, 2025	3.870
	2018, 2022, 2025	4.741
Reading	2015, 2018, 2022, 2025	3.234
	2015, 2018, 2025	3.161
	2015, 2022, 2025	3.930
	2017, 2022, 2025	4.873
	2018, 2022, 2025	2.617
Mathematics	2015, 2018, 2022, 2025	3.001
	2015, 2018, 2025	2.872
	2015, 2022, 2025	3.054
	2017, 2022, 2025	3.808
	2018, 2022, 2025	3.652

StatLink https://stat.link/p7oc9v

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Mogstad, M. et al. (2023), “Inference for Ranks with Applications to Mobility across Neighbourhoods and Academic Achievement across Countries”, *Review of Economic Studies*, https://doi.org/10.1093/restud/rdad006. [4]

OECD (2023), *PISA 2022 Results (Volume I): The State of Learning and Equity in Education*, PISA, OECD Publishing, Paris, https://doi.org/10.1787/53f23881-en. [3]

OECD (forthcoming), *PISA 2025 Technical Report*, OECD Publishing, Paris. [2]

Wasserstein, R. and N. Lazar (2016), “The ASA Statement on p-Values: Context, Process, and Purpose”, *The American Statistician*, Vol. 70/2, pp. 129-133, https://doi.org/10.1080/00031305.2016.1154108. [1]

Annex B1. Results for countries and economies

Table I.B1.1. How did countries perform in PISA 2025? Chapter 1 tables

Table I.B1.1.1	Learners' competencies
Table I.B1.1.2	Competent learners
Table I.B1.1.3	Students' beliefs in social mobility
Table I.B1.1.4	Students' beliefs in social mobility, by student and school characteristics
Table I.B1.1.5	Relationships between students' growth mindset and beliefs in social mobility
Table I.B1.1.6	Students' beliefs in social mobility and growth mindset, by academic resilience in science

StatLink https://stat.link/9i7u4g

Table I.B1.2. Student performance in PISA 2025. Chapter 2 tables – Performance and proficiency

Table I.B1.2a.1	Mean score and variation in science performance
Table I.B1.2a.2	Mean score and variation in reading performance
Table I.B1.2a.3	Mean score and variation in mathematics performance
Table I.B1.2a.4	Mean score and variation in computational problem-solving performance
Table I.B1.2a.5	Mean score and variation in student performance on the science subscale explain phenomena scientifically
Table I.B1.2a.6	Mean score and variation in student performance on the science subscale evaluate designs for scientific enquiry
Table I.B1.2a.7	Mean score and variation in student performance on the science subscale evaluate scientific information for decision making
Table I.B1.2a.8	Mean score and variation in student performance on the computational problem-solving subscale modelling
Table I.B1.2a.9	Mean score and variation in student performance on the computational problem-solving subscale programming
Table I.B1.2a.10	Percentage of students at each proficiency level in science
Table I.B1.2a.11	Percentage of students at each proficiency level in reading
Table I.B1.2a.12	Percentage of students at each proficiency level in mathematics
Table I.B1.2a.13	Percentage of students at each proficiency level in computational problem-solving
Table I.B1.2a.14	Percentage of students at each proficiency level on the science subscale explain phenomena scientifically
Table I.B1.2a.15	Percentage of students at each proficiency level on the science subscale evaluate designs for scientific enquiry
Table I.B1.2a.16	Percentage of students at each proficiency level on the science subscale evaluate scientific information for decision making
Table I.B1.2a.17	Percentage of students at each proficiency level on the computational problem-solving subscale modelling
Table I.B1.2a.18	Percentage of students at each proficiency level on the computational problem-solving subscale programming
Table I.B1.2a.19	Correlation of mean performance across domains
Table I.B1.2a.20	Relative performance in computational problem-solving
Table I.B1.2a.21	Overlap of top performers in science, reading and mathematics
Table I.B1.2a.22	Overlap of low performers in science, reading and mathematics
Table I.B1.2a.23	Overlap of top performers in science, reading and mathematics among all 15-year-olds
Table I.B1.2a.24	Overlap of low performers in science, reading and mathematics among all 15-year-olds
Table I.B1.2a.25	Total variation in science performance, and variation between and within schools (with modal ISCED restriction)
Table I.B1.2a.26	Total variation in science performance, and variation between and within schools (without modal ISCED restriction)
Table I.B1.2a.27	Total variation in reading performance, and variation between and within schools (with modal ISCED restriction)
Table I.B1.2a.28	Total variation in reading performance, and variation between and within schools (without modal ISCED restriction)
Table I.B1.2a.29	Total variation in mathematics performance, and variation between and within schools (with modal ISCED restriction)

Table I.B1.2a.30	Total variation in mathematics performance, and variation between and within schools (without modal ISCED restriction)
Table I.B1.2a.31	Total variation in computational problem-solving performance, and variation between and within schools (with modal ISCED restriction)
Table I.B1.2a.32	Total variation in computational problem-solving performance, and variation between and within schools (without modal ISCED restriction)
Table I.B1.2a.33	Percentage of low performers and top performers in science, 2006 through 2025
Table I.B1.2a.34	Percentage of low performers and top performers in reading, 2000 through 2025
Table I.B1.2a.35	Percentage of low performers and top performers in mathematics, 2003 through 2025
Table I.B1.2a.36	Mean science performance, 2006 through 2025
Table I.B1.2a.37	Mean reading performance, 2000 through 2025
Table I.B1.2a.38	Mean mathematics performance, 2003 through 2025
Table I.B1.2a.39	Distribution of science scores, 2006 through 2025
Table I.B1.2a.40	Distribution of reading scores, 2000 through 2025
Table I.B1.2a.41	Distribution of mathematics scores, 2003 through 2025
Table I.B1.2a.42	Variation in science performance, 2006 through 2025
Table I.B1.2a.43	Variation in reading performance, 2000 through 2025
Table I.B1.2a.44	Variation in mathematics performance, 2003 through 2025
Table I.B1.2a.45	Percentage of low performers and top performers in science among all 15-year-olds, 2015 through 2025
Table I.B1.2a.46	Percentage of low performers and top performers in reading among all 15-year-olds, 2015 through 2025
Table I.B1.2a.47	Percentage of low performers and top performers in mathematics among all 15-year-olds, 2015 through 2025
Table I.B1.2a.48	Distribution of science scores among 15-year-olds, 2015 through 2025
Table I.B1.2a.49	Distribution of reading scores among 15-year-olds, 2015 through 2025
Table I.B1.2a.50	Distribution of mathematics scores among 15-year-olds, 2015 through 2025

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Table I.B1.3. Student performance in PISA 2025. Chapter 2 tables – Socio-economic differences

Table I.B1.2b.1	Students' socio-economic status
Table I.B1.2b.2	Socio-economic status and science performance
Table I.B1.2b.3	Socio-economic status and reading performance
Table I.B1.2b.4	Socio-economic status and mathematics performance
Table I.B1.2b.5	Socio-economic status and computational problem-solving performance
Table I.B1.2b.6	Percentage of students by international deciles of socio-economic status
Table I.B1.2b.7	Percentage of students by international quartiles of socio-economic status
Table I.B1.2b.8	Science performance, by international deciles of socio-economic status
Table I.B1.2b.9	Reading performance, by international deciles of socio-economic status
Table I.B1.2b.10	Mathematics performance, by international deciles of socio-economic status
Table I.B1.2b.11	Science performance, by international quartiles of socio-economic status
Table I.B1.2b.12	Reading performance, by international quartiles of socio-economic status
Table I.B1.2b.13	Mathematics performance, by international quartiles of socio-economic status
Table I.B1.2b.14	Low and top performance in science, by students' socio-economic status
Table I.B1.2b.15	Low and top performance in reading, by students' socio-economic status
Table I.B1.2b.16	Low and top performance in mathematics, by students' socio-economic status
Table I.B1.2b.17	Between- and within-school variation in students' socio-economic status (with modal ISCED restriction)
Table I.B1.2b.18	Between- and within-school variation in students' socio-economic status (without modal ISCED restriction)
Table I.B1.2b.19	Students' deprivation
Table I.B1.2b.20	Students' socio-economic status and deprivation
Table I.B1.2b.21	Deprivation and science performance
Table I.B1.2b.22	Science performance by national quarter of socio-economic status, 2015 through 2025
Table I.B1.2b.23	Reading performance by national quarter of socio-economic status, 2015 through 2025

Table I.B1.2b.24	Mathematics performance by national quarter of socio-economic status, 2015 through 2025
Table I.B1.2b.25	Strength of the relationship between science performance and socio-economic status, 2015 through 2025
Table I.B1.2b.26	Strength of the relationship between reading performance and socio-economic status, 2015 through 2025
Table I.B1.2b.27	Strength of the relationship between mathematics performance and socio-economic status, 2015 through 2025
Table I.B1.2b.28	Low performance in science, by quarter of socio-economic status, 2015 through 2025
Table I.B1.2b.29	Low performance in reading, by quarter of socio-economic status, 2015 through 2025
Table I.B1.2b.30	Low performance in mathematics, by quarter of socio-economic status, 2015 through 2025
Table I.B1.2b.31	Top performance in science, by quarter of socio-economic status, 2015 through 2025
Table I.B1.2b.32	Top performance in reading, by quarter of socio-economic status, 2015 through 2025
Table I.B1.2b.33	Top performance in mathematics, by quarter of socio-economic status, 2015 through 2025
Table I.B1.2b.34	Missing frequencies of socio-economic status, 2015 through 2025
Table I.B1.2b.35	Missing frequencies of home possessions, 2015 through 2025
Table I.B1.2b.36	Science performance by national quarter of home possessions, 2015 through 2025
Table I.B1.2b.37	Reading performance by national quarter of home possessions, 2015 through 2025
Table I.B1.2b.38	Mathematics performance by national quarter of home possessions, 2015 through 2025

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Table I.B1.4. Student performance in PISA 2025. Chapter 2 tables – Gender differences

Table I.B1.2c.1	Science performance, by gender
Table I.B1.2c.2	Reading performance, by gender
Table I.B1.2c.3	Mathematics performance, by gender
Table I.B1.2c.4	Computational problem-solving performance, by gender
Table I.B1.2c.5	Mean score and variation on the science subscale explain phenomena scientifically, by gender
Table I.B1.2c.6	Mean score and variation on the science subscale evaluate designs for scientific enquiry, by gender
Table I.B1.2c.7	Mean score and variation on the science subscale evaluate scientific information for decision making, by gender
Table I.B1.2c.8	Mean score and variation on the computational problem-solving subscale modelling, by gender
Table I.B1.2c.9	Mean score and variation on the computational problem-solving subscale programming, by gender
Table I.B1.2c.10	Percentage of students at each proficiency level in science, by gender
Table I.B1.2c.11	Percentage of students at each proficiency level in reading, by gender
Table I.B1.2c.12	Percentage of students at each proficiency level in mathematics, by gender
Table I.B1.2c.13	Percentage of students at each proficiency level in computational problem-solving, by gender
Table I.B1.2c.14	Low and top performance in science, by gender
Table I.B1.2c.15	Low and top performance in reading, by gender
Table I.B1.2c.16	Low and top performance in mathematics, by gender
Table I.B1.2c.17	Science performance, by gender and socio-economic status
Table I.B1.2c.18	Reading performance, by gender and socio-economic status
Table I.B1.2c.19	Mathematics performance, by gender and socio-economic status
Table I.B1.2c.20	Low and top performance in science, by gender and socio-economic status
Table I.B1.2c.21	Low and top performance in reading, by gender and socio-economic status
Table I.B1.2c.22	Low and top performance in mathematics, by gender and socio-economic status
Table I.B1.2c.23	Girls' science performance, 2015 through 2025
Table I.B1.2c.24	Boys' science performance, 2015 through 2025
Table I.B1.2c.25	Gender differences in science performance, 2015 through 2025
Table I.B1.2c.26	Girls' reading performance, 2015 through 2025
Table I.B1.2c.27	Boys' reading performance, 2015 through 2025
Table I.B1.2c.28	Gender differences in reading performance, 2015 through 2025
Table I.B1.2c.29	Girls' mathematics performance, 2015 through 2025

Table I.B1.2c.30	Boys' mathematics performance, 2015 through 2025
Table I.B1.2c.31	Gender differences in mathematics performance, 2015 through 2025
Table I.B1.2c.32	Low performance in science among boys and girls, 2015 through 2025
Table I.B1.2c.33	Top performance in science among boys and girls, 2015 through 2025
Table I.B1.2c.34	Low performance in reading among boys and girls, 2015 through 2025
Table I.B1.2c.35	Top performance in reading among boys and girls, 2015 through 2025
Table I.B1.2c.36	Low performance in mathematics among boys and girls, 2015 through 2025
Table I.B1.2c.37	Top performance in mathematics among boys and girls, 2015 through 2025

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Table I.B1.5. Student performance in PISA 2025. Chapter 2 tables – Immigrant background

Table I.B1.2d.1	Students with an immigrant background, 2015 through 2025
Table I.B1.2d.2	Missing frequencies of immigrant background, 2015 through 2025
Table I.B1.2d.3	Socio-economic status, by immigrant background
Table I.B1.2d.4	Disadvantaged students, by immigrant background, 2015 through 2025
Table I.B1.2d.5	Advantaged students, by immigrant background, 2015 through 2025
Table I.B1.2d.6	Language spoken at home by immigrant background, 2015 through 2025
Table I.B1.2d.7	Science performance by immigrant background, 2015 through 2025
Table I.B1.2d.8	Reading performance by immigrant background, 2015 through 2025
Table I.B1.2d.9	Mathematics performance by immigrant background, 2015 through 2025
Table I.B1.2d.10	Difference in science performance, by immigrant background, after accounting for student socio-economic status and language spoken at home, 2015 through 2025
Table I.B1.2d.11	Difference in reading performance, by immigrant background, after accounting for student socio-economic status and language spoken at home, 2015 through 2025
Table I.B1.2d.12	Difference in mathematics performance, by immigrant background, after accounting for student socio-economic status and language spoken at home, 2015 through 2025
Table I.B1.2d.13	Low performance in science by immigrant background, 2015 through 2025
Table I.B1.2d.14	Low performance in reading by immigrant background, 2015 through 2025
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StatLink https://stat.link/6gtbnx

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StatLink https://stat.link/5eaxdr

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StatLink https://stat.link/xmra2f

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StatLink https://stat.link/h3z8b1

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StatLink https://stat.link/hpo5n3

Annex C. Released items from the PISA 2025 Science and Learning in the Digital World (LDW) assessments

Introduction

This annex presents two examples of released units from the PISA 2025 Science assessment and the Learning in the Digital World (LDW) assessment. It includes screenshots of the tasks, together with item information.

Additional released unites and fully interactive versions are available on the PISA website: https://www.oecd.org/en/about/programmes/pisa/pisa-test.html

Science released unit: Offshore Wind Turbine Farm

Offshore Wind Turbine Farm – Question 1 (CESPS003Q01)

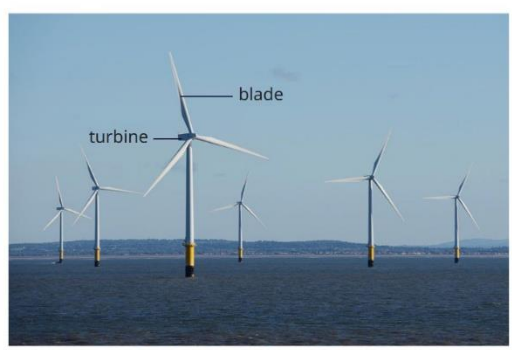
Explain one way in which the environment benefits when electricity is generated using wind instead of fossil fuels.

Offshore Wind Turbine Farm

A coastal town is considering constructing an offshore wind turbine farm to generate electricty.

Wind causes the blades on a wind turbine to turn, which generates electricity. The electricity is added to the electricity network onshore.

Some people in the town are in favour of the project. Other people are concerned that the project will have a negative impact on the local environment.



An offshore wind turbine farm

Question Type	Open Response
Competency	Explain phenomena scientifically
Knowledge System	Content knowledge
Context	Global – Environmental Impacts & Climate Change
Environmental Competency	Explain the impact of human interactions within Earth's systems
Difficulty	667 (Level 5)

Scoring

Full Credit

- The student must provide a description of an environmental benefit of using wind turbines instead of burning fossil fuels to generate electricity.
- Examples of responses include:
- CO_2 is not released during the generation of electricity.
- No carbon dioxide is released. [true during power generation although CO_2 could be released at other stages, e.g. transport and construction]
- Burning fossil fuels releases more CO_2 than wind.
- Less CO_2 [minimum response]

Description

To successfully complete the question, students are required to draw on their scientific knowledge to provide and explain one way in which the use of renewable energies instead of fossil fuels benefits the environment.

This question is of moderate to high cognitive demand (Proficiency Level 5) requiring students to identify and construct a scientific explanation of a familiar phenomenon.

A correct response provides an explanation that wind energy produces electricity without burning fossil fuels, which reduces carbon dioxide emissions and air pollution. This demonstrates an understanding that renewable energy sources helps mitigate climate change and reduces the release of pollutants that can harm ecosystems and human health.

Offshore Wind Turbine Farm – Question 2 (CESPS003Q02)

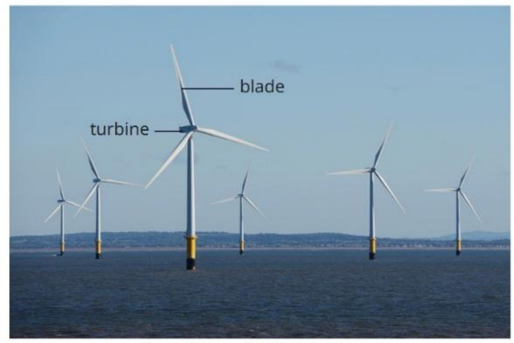
Describe one negative impact that the wind farm could have on the local environment.

Offshore Wind Turbine Farm

A coastal town is considering constructing an offshore wind turbine farm to generate electricty.

Wind causes the blades on a wind turbine to turn, which generates electricity. The electricity is added to the electricity network onshore.

Some people in the town are in favour of the project. Other people are concerned that the project will have a negative impact on the local environment.



An offshore wind turbine farm

Question Type	Open Response
Competency	Explain phenomena scientifically
Knowledge System	Content knowledge
Context	Local – Environmental Impacts & Climate Change
Environmental Competency	Explain the impact of human interactions within Earth's systems
Difficulty	605 (Level 4)

Scoring

Full Credit

The student must describe one negative impact that a wind farm could have on the local environment. Responses could include:

- The local sea floor, flora and/or fauna may be harmed during the construction phase.
- Birds might fly into the blades.
- Wind farms could interfere with the movement of wildlife (e.g. fish, whales, dolphins).
- Wildlife may not like the noise or vibration of the blades.
- There would be permanent alteration of the aquatic environment.
- Water currents/waves might be altered.
- Animals will suffer

Description

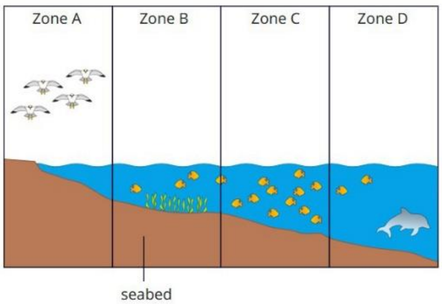
To successfully complete the question, the student must draw on their knowledge to provide and explain one way in which the installation of wind turbines in a marine environment could damage the immediate environment.

Offshore Wind Turbine Farm – Question 3 (CESPS003Q04)

The town decides to go ahead with constructing the offshore wind turbine farm.

Wind turbines have to be anchored to the seabed. The deeper the seabed the more expensive it is to install the turbines.

The wind farm will be built in one of the zones shown in the diagram.



Consider this information about the zones:

- Zone A is visited by large numbers of seabirds every day.
- Zone B supports green algae, a critical source of food for many marine organisms.
- Zones B and C support shoals of common fish species.
- Zone D is deep enough to allow large marine animals to swim through it.

In which zone should the wind turbines be installed as the best compromise between the financial cost and environmental impact?

- Zone A
- Zone B
- Zone C
- Zone D

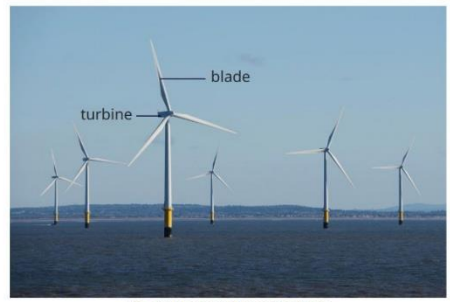
Explain your choice.

Offshore Wind Turbine Farm

A coastal town is considering constructing an offshore wind turbine farm to generate electricty.

Wind causes the blades on a wind turbine to turn, which generates electricity. The electricity is added to the electricity network onshore.

Some people in the town are in favour of the project. Other people are concerned that the project will have a negative impact on the local environment.



An offshore wind turbine farm

Question Type	Open Response
Competency	Research evaluate and use scientific information for decision making and action
Knowledge System	Procedural knowledge
Context	Local – Environmental Impacts & Climate Change
Environmental Competency	Make informed decisions to act based on evaluation of diverse sources
Difficulty	Code 1: 559 (Level 4) Code 2: 625 (Level 4) Code 3: 762 (Level 6)

Scoring

Student must select ‘Zone C’

Full Credit

- Three marks: The student also explains the elements of the compromise that must be made by referring to both financial cost and environmental considerations. Responses could include
  - [Zone C] Building here will be a more expensive option because it is away from the shore in deeper water. However, the fish in this area can move to other habitats whereas this is not as easy for the wildlife in other zones which makes the cost worthwhile.
  - [Zone C] This is not the cheapest area to build it but it will reduce the impact on the environment since this area is not critical for the survival of any species.
  - [Zone C] Is in deeper water but the animals in Zone C are also in Zone B, so they can move to another habitat unlike the wildlife/plants in other areas.

Partial Credit

- Two marks: the student considers one aspect of the compromise by referring to either the financial cost or an environmental consideration. Responses could include:
  - [Zone C] Because the animals in this zone can be found in other zones, so they have somewhere to go when the turbines are built. [*does not refer to financial cost considerations*]
  - [Zone C] The fish will be able to move to Zone B, whereas the plant/aquatic life in Zones other than C are unable to move to other areas so turbines should not be built in them.
  - [Zone C] Because this will be cheaper than building in deeper water. [*does not refer to environmental impact*]
  - [Zone C] There are no birds, but it is quite deep. [‘quite deep’ refers to increased cost; ‘no birds’ does not fully explain the environmental considerations of building in Zone C]
  - [Zone C] Some fish might become extinct
  - [Zone C] because this is not the deepest. [*implied consideration of cost*]
  - [Zone C] The fish are small enough to swim around it.
- One mark: Selects [Zone C] without an explanation or with an incorrect explanation. Responses could include:
  - [Zone C] It is far enough offshore that they won’t bother anyone.
  - [Zone C] The turbines should be built on land.

Description

To successfully complete the task presented in this question, the student must evaluate a series of contextual data presented in diagrammatic and text forms to determine the best location for wind turbines and provide a supporting explanation that considers both economic and environmental factors.

The task is of high cognitive demand in that it requires evaluation of both diagrammatic and textual information to identify that the solution must involve a compromise between environmental and economic factors. They must also be able to provide a written justification for their choice of solution.

Students receive two marks if they select the zone representing the best compromise between environmental and economic factors but only describe one of those factors in their justification.

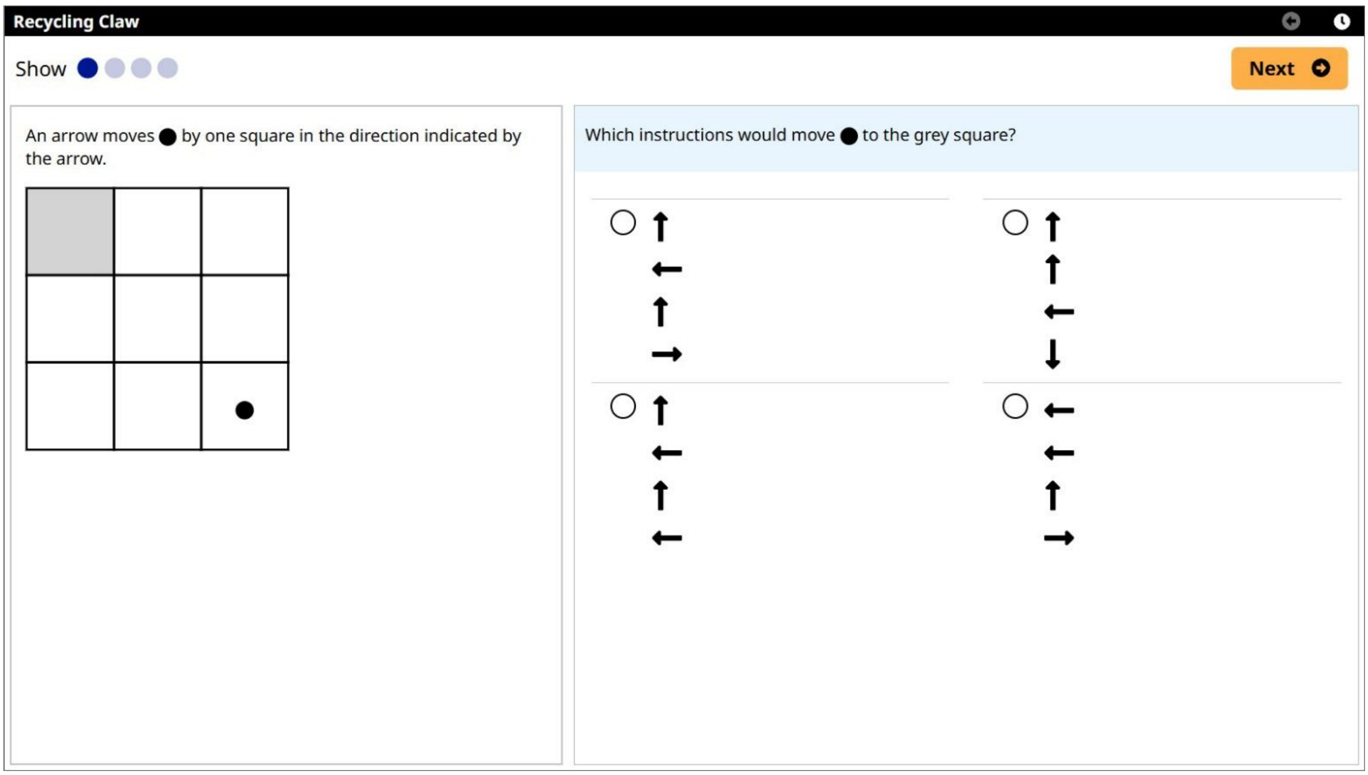
Students receive one mark if they select the zone representing the best compromise between environmental and economic factors but do not provide a justification for their choice.

LDW released unit: Recycling Claw

In the “Recycling Claw” unit, students learn how to program a robotic claw to recycle different objects.

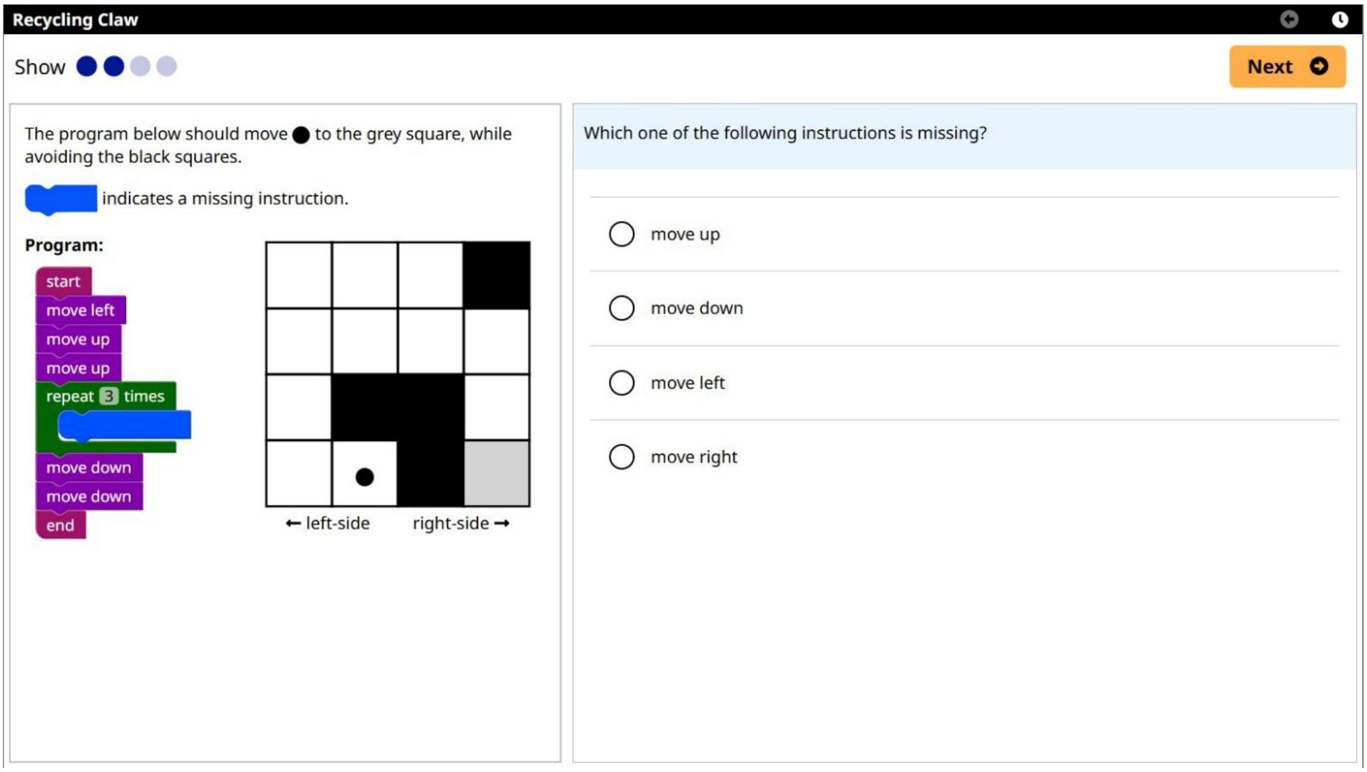
“Show” phase

Show 1 – P1M102



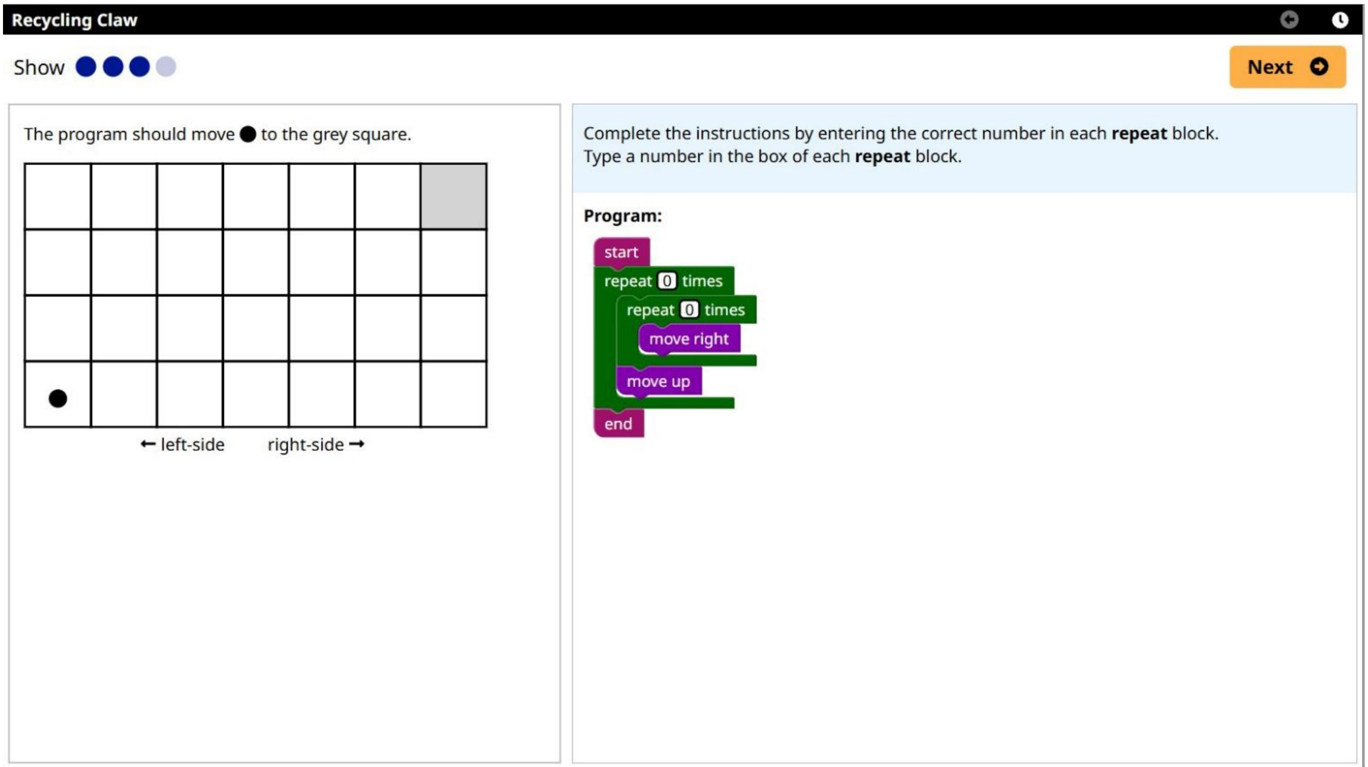
Item name / number	Recycling Claw Show 1 / P1M102
Cognitive scale	Computational practices prior knowledge
Response format	Simple multiple choice
Answer	3 (Up, left, up, left)
Item difficulty	351

Show 2 – P1M105



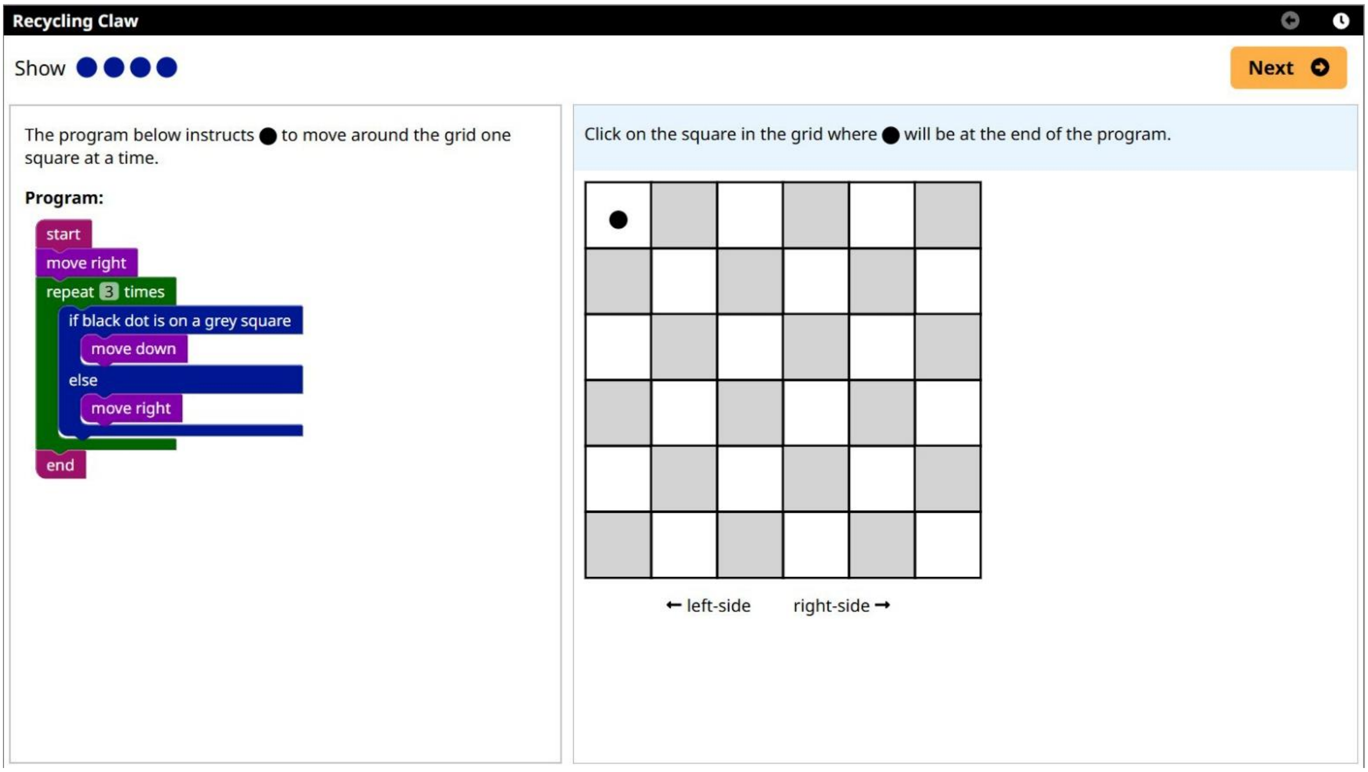
Item name / number	Recycling Claw Show 2 / P1M105
Cognitive scale	Computational practices prior knowledge
Response format	Simple multiple choice
Answer	4 ("move right")
Item difficulty	405

Show 3 – P1M135



Item name / number	Recycling Claw Show 3 part A / P1M135A
Cognitive scale	Computational practices prior knowledge
Response format	Free number input
Answer	3
Item name / number	Recycling Claw Show 3 part B / P1M135B
Cognitive scale	Computational practices prior knowledge
Response format	Free number input
Answer	2
Item difficulty	634

Show 4 – P1M133



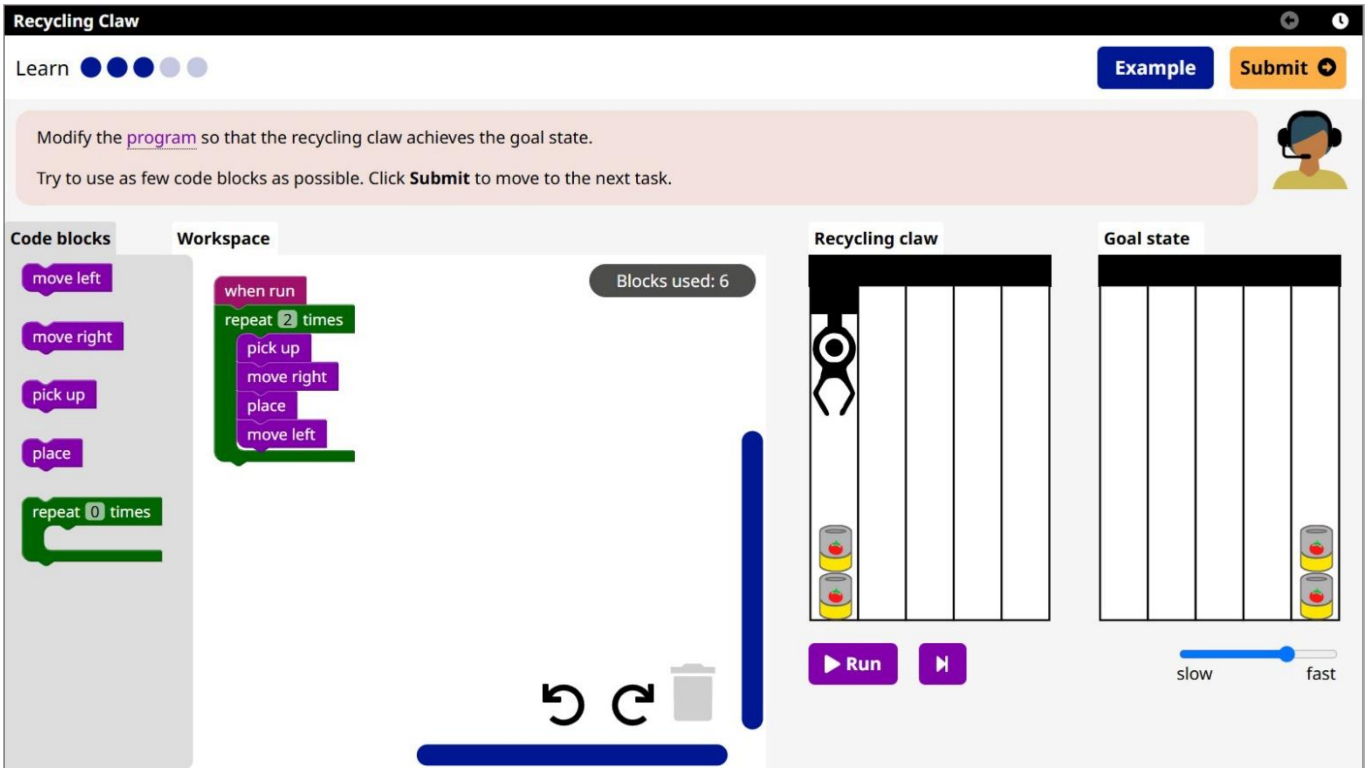
Item name / number	Recycling Claw Show 4 / P1M133
Cognitive scale	Computational practices prior knowledge
Response format	Hotspot (student selects a grid cell between 1-36 in the grid)
Answer	Cell 16 (where cell 1 is the top **right hand** corner, reading **right to left** across each row)
Item difficulty	638

"Learn" phase

Learn 3 – P1M120

Learn 3 is the first of the interactive, non-tutorial tasks in the "Learn" phase of the "Recycling Claw" unit. In all 3 "Learn" phase tasks of the unit, as well as the "Apply" phase task, students are instructed to modify or create a program that will enable the Recycling Claw to replicate the outcome shown in the Goal state world.

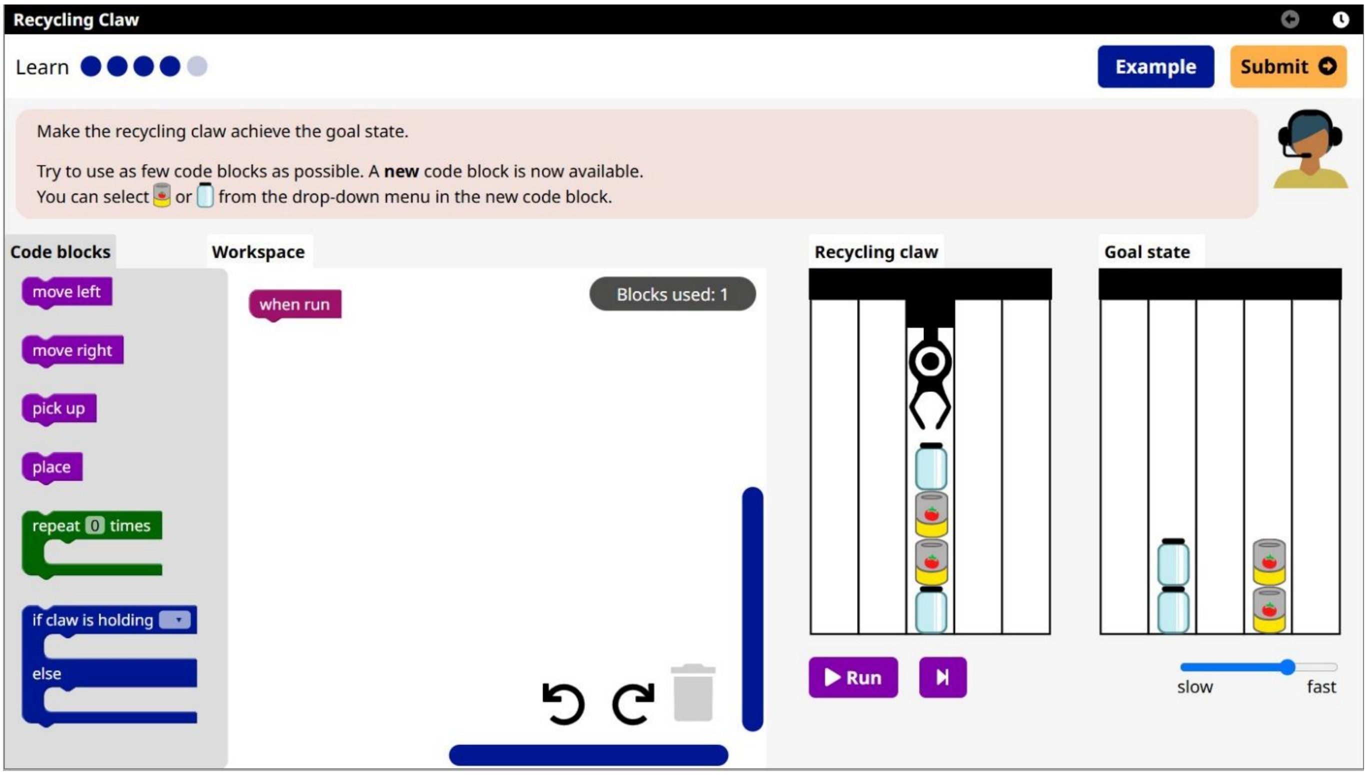
Students can execute (run) or step through their program as many times as they wish, as well as use any of the code blocks available to them in the code block library (there are no limits on the number of times each code block can be used). Students can also consult a worked example related to a similar problem for help on each task, with the help focusing on the relevant computational concept introduced in each task (e.g. repeat, conditional).



Note: Learn 1 and Learn 2 that precede Learn 3 are heavily scaffolded, embedded tutorial tasks and do not contribute to the performance scales.

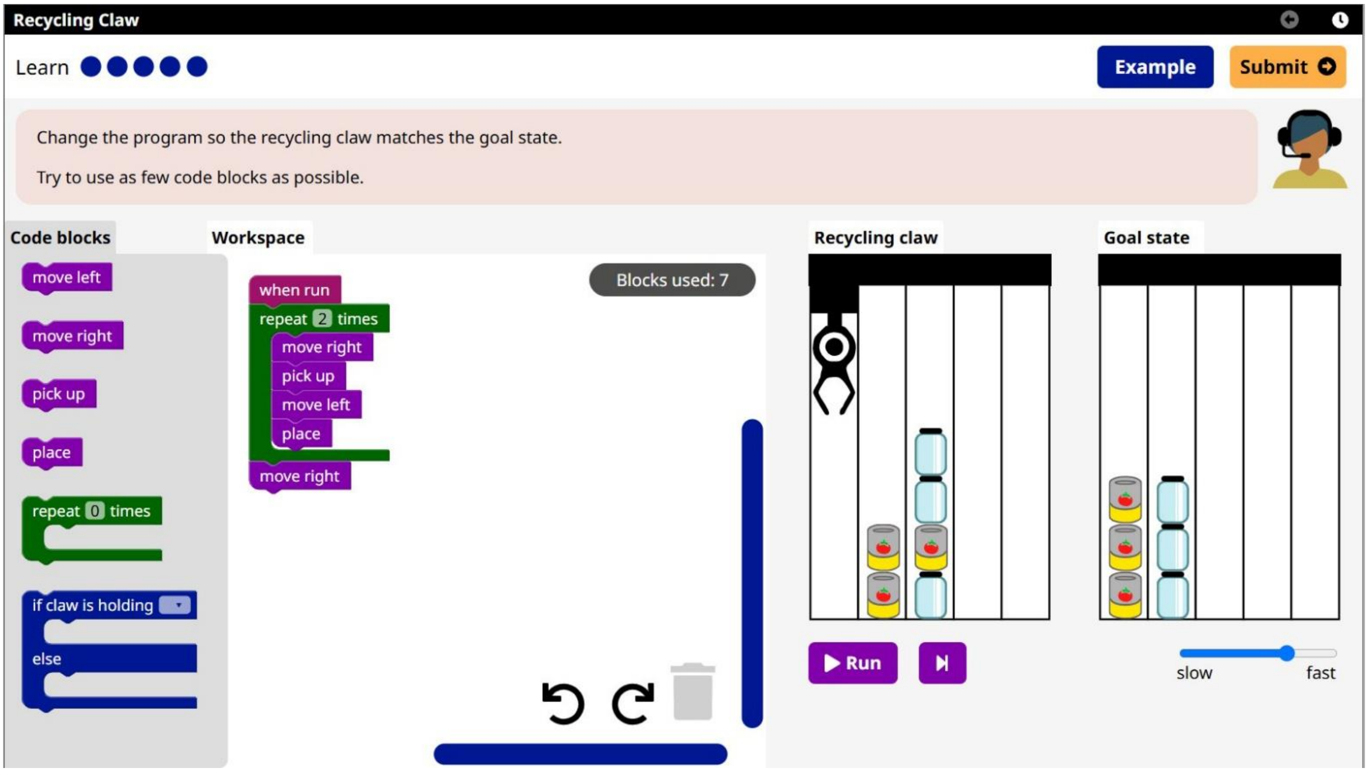
Item name / number	Recycling Claw Learn 3 / P1M120	
Cognitive scale	Computational problem solving	
Cognitive sub-scale	Programming	
Cognitive process	Build and debug computational artefacts	
Extended partial credit scoring model		
Item difficulty	Code/score	Solution state
648 (Level 6)	5	The goal state was **achieved** The program includes at least two **repeat *n* blocks**, at least one of which contains ONLY **move left/move right** The program contains **exactly 8 blocks**
539 (Level 4)	4	The goal state was **achieved** The program includes at least one **repeat *n* block** containing a **move left** AND/OR a **move right** block The program contains **fewer than 12 blocks**
481 (Level 3)	3	The goal state was **achieved** The program contains **12 or more blocks**
472 (Level 3)	2	The program moves at least one object to a correct location in any intermediate (any program execution) or final solution
446 (Level 2)	1	The program moves an object to any location in any intermediate (any program execution) or final solution
-	0	All other solutions

Learn 4 – P1M123



Item name / number	Recycling Claw Learn 4 / P1M123	
Cognitive scale	Computational problem solving	
Cognitive sub-scale	Programming	
Cognitive process	Build and debug computational artefacts	
Extended partial credit scoring model		
Item difficulty (Level)	Code/score	Solution state
654 (Level 6)	5	The goal state was **achieved** The program includes a **repeat *n* block** that correctly sorts at least one object The program contains **exactly 10 blocks**
611 (Level 5)	4	The goal state was **achieved** The program contains **fewer than 14 blocks**
496 (Level 3)	3	The goal state was **achieved** The program contains **14 or more blocks**
437 (Level 2)	2	The program sorts at least one object correctly in any intermediate (any program execution) or final solution
401 (Level 1)	1	The program moves an object to any location in any intermediate (any program execution) or final solution
	0	All other solutions

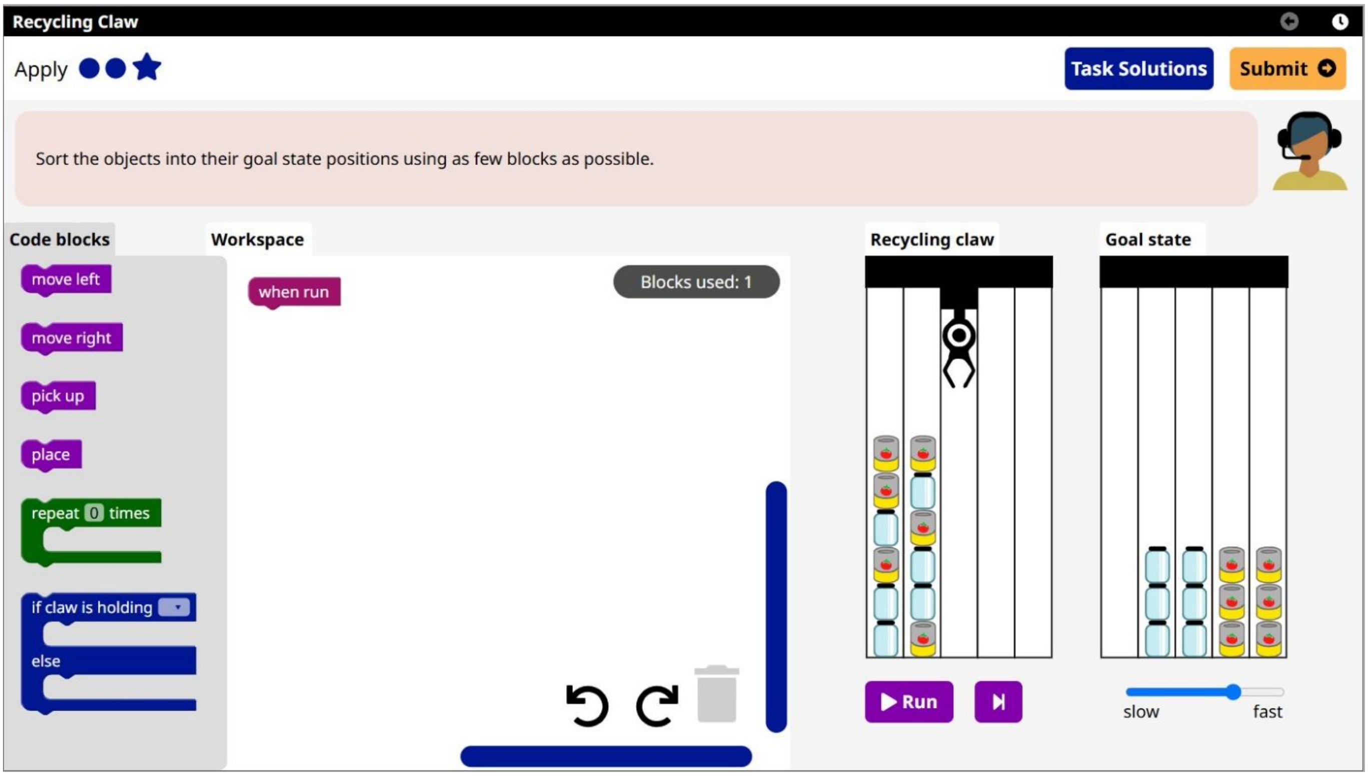
Learn 5 – P1M124



Item name / number	Recycling Claw Learn 5 / P1M124	
Cognitive scale	Computational problem solving	
Cognitive sub-scale	Programming	
Cognitive process	Build and debug computational artefacts	
Extended partial credit scoring model		
Item difficulty (Level)	Code/score	Solution state
1055 (Level 6)	5	The goal state was **achieved** The program includes **two repeat *n* blocks** that sort at least two objects in each column The program contains **exactly 17 blocks**
780 (Level 6)	4	The goal state was **achieved** The program includes **two repeat *n* blocks** that sort at least two objects in each column The program contains **fewer than 20 blocks**
635 (Level 6)	3	The goal state was **achieved** The program contains **fewer than 26 blocks**
537 (Level 4)	2	The program sorts at least three objects correctly
442 (Level 2)	1	The program moves an object to any location in any intermediate (any program execution) or final solution
	0	All other solutions

"Apply" phase

Apply 3 – P1M128



Item name / number	Recycling Claw Apply 3 / P1M128	
Cognitive scale	Computational problem solving	
Cognitive sub-scale	Programming	
Cognitive process	Build and debug computational artefacts	
Extended partial credit scoring model		
Item difficulty (Level)	Code/score	Solution state
899 (Level 6)	5	The goal state was **achieved** The program contains **exactly 14 blocks**
687 (Level 6)	4	The goal state was **achieved** The program contains **fewer than 21 blocks**
544 (Level 4)	3	The program sorts **at least 3 objects** correctly
455 (Level 2)	2	The program sorts **at least one** object correctly in any intermediate (any program execution) or final solution
411 (Level 1)	1	The program moves an object to any location in any intermediate (any program execution) or final solution
	0	All other solutions

Annex D. Overview of performance trends

Overviews of performance trends by country are available with the Statlink below the table.

Table I.D.1. Overviews of performance trends by country and economy

Albania	Hong Kong (China)	Norway
Argentina	Hungary	Palestinian Authority
Armenia	Iceland	Paraguay
Australia	Indonesia	Peru
Austria	Ireland	Philippines
Azerbaijan	Israel	Poland
Belgium	Italy	Portugal
Brazil	Japan	Qatar
Brunei Darussalam	Jordan	Romania
B-S-J-Z (China)	Kazakhstan	Rwanda
Bulgaria	Kenya	Saudi Arabia
Cambodia	Korea	Serbia
Canada	Kosovo	Singapore
Chile	Kurdistan Region (Iraq)	Slovak Republic
Colombia	Kyrgyzstan	Slovenia
Costa Rica	Latvia	Spain
Croatia	Lebanon	Sweden
Cyprus	Lithuania	Switzerland
Czechia	Luxembourg	Chinese Taipei
Denmark	Macao (China)	Thailand
Dominican Republic	Malaysia	Türkiye
Dushanbe (Tajikistan)	Malta	Ukrainian regions (17 of 27)
Ecuador	Mauritius	United Arab Emirates
El Salvador	Mexico	United Kingdom
Estonia	Moldova	United States
Finland	Mongolia	Uruguay
France	Montenegro	Uzbekistan
Georgia	Morocco	Viet Nam
Germany	Netherlands	Zambia
Greece	New Zealand	
Guatemala	North Macedonia	

StatLink https://stat.link/urv65o

Annex E. The development and implementation of PISA: A collaborative effort

PISA is a collaborative effort, bringing together experts from the participating countries, steered jointly by their governments based on shared, policy-driven interests.

The PISA Governing Board, on which each country is represented, determines the policy priorities for PISA, in the context of OECD objectives, and oversees adherence to these priorities during the implementation of the programme. This includes setting priorities for the development of indicators, for establishing the assessment instruments, and for reporting the results.

Experts from various countries serve on working groups that are charged with linking policy objectives with the best internationally available technical expertise. By participating in these expert groups, they ensure that the instruments are internationally valid and take into account the cultural and educational contexts in OECD member and partner countries and economies, that the assessment materials have strong measurement properties, and that the instruments place emphasis on authenticity and educational validity.

Through National Project Managers, participating countries and economies implement PISA at the national level subject to the agreed administration procedures. National Project Managers play a vital role in ensuring that the implementation of the survey is of high quality, and verify and evaluate the survey results, analyses, reports and publications.

The design and implementation of the surveys, within the framework established by the PISA Governing Board, is the responsibility of external contractors. For PISA 2025, the overall management of contractors and implementation was carried out by the Australian Council for Educational Research (ACER) in Australia as the Core 1 contractor. Tasks under Core 1 also included instrument development, survey operations and meetings, development of the computer platform, linguistic quality control, data handling, analysis and scaling. These tasks were implemented in co-operation from the following subcontractors: i) Open Assessment Technologies for the development and maintenance of the PISA 2025 platform and migration of trend units; ii) cApStAn SA for linguistic quality control; and iii) HallStat SPRL as translation referee.

The remaining tasks related to the implementation of PISA 2025 were implemented through three additional contractors – Cores 2 to 4. The development of the cognitive assessment framework for science was carried out by Oxford University Press (OUP) in the United Kingdom, as the Core 2 contractor. Sampling and weighting were under the responsibility of Westat in the United States as the Core 3 contractor, with ACER as a subcontractor for the sampling software Maple. The Instrument development for the Learning in the Digital World assessment was carried out by ACER, as the Core 4 contractor.

The OECD Secretariat has overall managerial responsibility for the programme, monitors its implementation daily, acts as the secretariat for the PISA Governing Board, builds consensus among countries and serves as the interlocutor between the PISA Governing Board and the international contractors charged with implementing the activities. The OECD Secretariat also produces the indicators and analyses and prepares the international reports and publications in co-operation with the PISA Core contractors and in close consultation with member and partner countries and economies both at the policy level (PISA Governing Board) and at the level of implementation (National Project Managers).

For PISA 2025, the OECD Secretariat also coordinated the development of the PISA 2025 Foreign Language Assessment (FLA), collaborated with the Core 1 Contractor in its implementation and led the development of the FLA framework and FLA questionnaires. The tests for the PISA 2025 Foreign Language assessment were developed in partnership with Cambridge University Press & Assessment, who provided the tests and conducted the scoring of speaking responses.

The cognitive assessment framework and initial prototype items for the PISA 2025 Learning in the Digital World assessment were developed by the OECD Secretariat in collaboration with the Learning in the Digital World Expert Group and extended expert groups. The OECD Secretariat also collaborated with ACER, the Core 4 Contractor, on the development of LDW instruments, scoring rules and indicators of self-regulated learning (SRL). The OECD Secretariat developed the SRL and LDW process data databases and related documentation.

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PISA 2025 Results (Volume I)

Future-Ready Students

The OECD Programme for International Student Assessment (PISA) 2025 evaluates what students know and can do in science, reading, mathematics and computational problem-solving, assessing how effectively they can apply their knowledge to real-world challenges. The assessment also explores a range of broader competencies, attitudes and behaviours, including curiosity, perseverance and the use of artificial intelligence. PISA results provide valuable insights into the quality and equity of learning outcomes around the world, enabling educators and policymakers to learn from each other's policies and practices. This volume is one of three that present the results of the ninth cycle of PISA. *PISA 2025 Results (Volume I): Future-Ready Students* focuses on students' performance in the core learning domains, and explores students' drive to learn, sense of agency and adaptability and attitudes towards school. It examines differences in learning outcomes by gender, socio-economic status and immigrant background. More than 760 000 students across 91 countries and economies participated in PISA 2025, making it the largest international comparative assessment of 15-year-olds worldwide.

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